PERSONALITIES

By George F. Taubeneck

Gentlemen, Please!

This thing has got to stop! This proselyting of our best men, we mean.

Last week this kolyum recorded the departure of Advertising Manager HOWARD MATEER for a big new job with McGraw-Hill, and that of Staff Writer ELSTON HERRON for Owens-Illinois Glass—with due lamentations.

"Mat" was one of the swellest eggs we've ever known, and one of the most colorful characters. "El" had been a protege of ours since he was graduated—short pants, double-thick-lens glasses, Epworth League ideals, and all—from Shelbyville Community High School.

We hated like sin to lose them both.

But now we really do have a sad story to tell. Engineering Editor JACK SCHAEFER, who has been this department's *best friend* and *bosom pal* for nigh onto nine years, will shortly entrain for York, Pa., to assume his new duties as publicity director for the York Ice Machinery Corp.

No kidding, gentlemen, this is really a personal blow. It's like losing a brother. Jack and the writer are of totally diverse temperaments, widely different tastes, and conflicting natures. There have been times when one felt more like feeding the other a Mickey Finn than the milk of human kindness.

Yet the relationship of mutual confidence and respect has been one of the finest things that has happened—or probably ever will happen—to the oversigned.

We have chased news stories, blondes, and excitement together over half the continent, and if we should happen to meet some day in an Old Men's Home somewhere, we'll have enough joint reminiscences to last us the rest of our days.

It was pure happenstance that we met. We came to the same university, and joined the same fraternity. Since that time we have seldom been separated.

We have lived together in that fraternity house, in Ma Fisher's boarding house, upstairs over a clattery confectionery, in a nine-room colonial home, in a cottage on a lake, in various and sundry apartments, and in many hotels.

Prize cohabitation anecdote, perhaps, is the time we set out together to find a small, quiet hotel for a permanent residence in Detroit. Finally we located one that just seemed to fill the bill, walked in, asked the monthly rates and, to the obvious surprise of the management, took a room. Unsuspectingly we had walked into the headquarters of Detroit's notorious Purple Gang, and were the only paying guests of the hotel.

For three months we lived there—or rather, *slept* there, for we were working night and day to get a new editorial formula into operation—amidst a curious assortment of rat-faced furriners, hard-eyed blondes, and over-exercised parlor dogs.

It was, believe it or not, the quietest living quarters we've ever had.

We grew our journalistic spurs together, working on the only morning daily newspaper in a community of 40,000 inhabitants—Jack as chief editorial writer, and yours truly as sports editor.

Coming eventually to ELECTRIC REFRIGERATION NEWS, we had the satisfaction of helping F. M. COCKRELL pioneer a brand new theory in business paper publishing, and watching our efforts evolve into something solid, substantial, successful, and widely copied.

Losing Jack is losing a brother. But, of course, we rejoice with him in his new opportunity.

He is joining the York organization at a psychological moment, at a time when this pioneer refrigeration and air-conditioning manufacturing concern stands in a commanding position to lead the uprush of America's next giant industry—air conditioning.

Moreover, he will be working directly for one of the finest personalities and most talented men in the refrigeration industry—J. L. ROSENMILLER.

On ELECTRIC REFRIGERATION NEWS Jack had free rein to obtain, select, and edit his own material. And as we have remarked previously in this kolyum, it has been generally admitted that no writer on any business paper today can tell an engineering story so lucidly or simply as Jack.

In addition to being Engineering Editor, he acted as an associate and advisory editor for the entire paper.

Get Him!

In re all the above discussion, GIL BAIRD, sales promotion manager for Westinghouse at Mansfield, sent us the following telegram last week:

"BOB RICHARDS TELLS ME OF GENERAL EXODUS STOP YOU MUST HAVE SOMETHING BAD STOP HAVE YOU TRIED LISTERINE STOP KEEP A LIP UPPER STIFF."

Maybe we do have halitosis and—because we have been surrounded by our best friends—haven't been told about it. But even the masterfully advertised antiseptic mouthwash couldn't help us in this situation, we fear.

The "general exodus" seems to prove two things: (1) that business is obviously getting better; and (2) that ELECTRIC REFRIGERATION NEWS must have been staffed by a first-rate bunch of men.

As Mr. Cockrell explains it, a man working for a business paper is constantly in the limelight, and is a marked man. His contacts are extraordinarily wide, and *are not competitive.* That is, he is seen frequently by a large number of executives, and generally is doing something for, not against, these executives.

What he can do becomes pretty generally known; and when a need arises for someone of his particular talents, his name is likely to pop into the mind of the executive who is looking for a man.

And because he is a known quantity (if he is a writer or an editor, his week's or month's work is put on display to the world regularly) he generally is able to command an attractive salary when he does leave the business paper for bigger things.

* * *

Parade Moves On

Naturally, Mr. Cockrell hates to lose these men, just as the rest of us do. But he will tell you, with a grin, that business will go on, as per usual.

Fact is, we have a sneaking suspicion that Mr. Cockrell is stimulated, rather than disturbed, by the prospect of a New Deal in the paper's personnel.

A highly developed schizoid, nothing really pleases and stimulates The Boss so much as an opportunity to institute a change, to solve a problem by *doing something different.*

He works on the highly tenable theory that to keep live, fresh, and interesting, a publication must *keep changing,* must keep abreast and slightly ahead of the times, must anticipate progress.

Not infrequently he has been compelled to revise the company personnel himself in order to effect changes because, unfortunately, human beings are not always flexible, and sometimes insist on doing things the way they have been done before, or not at all.

Working for Mr. Cockrell—disturbing though it may be to one's comfort and peace—is one of the best ways we know to keep a young mind. Flexibility is the prime requisite for one of his cohorts. Mateer, Herron, and Schaefer all had that quality; which is perhaps the chief reason why they will all be missed.

* * *

Introducing Frances

First new name to appear on the masthead is that of Miss FRANCES McNAMARA. We'd like for you to know about Frances, inasmuch as she is an example of Working One's Way Up.

Last summer Frances came to the Business News Publishing Co., seeking a job as a stenographer. She was a recent graduate of the University of Michigan and of the Business Institute.

Not needing any stenos at the moment, but sensing that here was a personable girl who was interested in something else in life beside parties and dances and new dresses, Mr. Cockrell sent her into us.

During the course of the conversation, it developed that she had read proof one summer for a small-town weekly up in Canada. At that moment our proofreading wasn't so very satisfactory, so we tried her on a few sample galleys, which she marked with neatness, dispatch, and accuracy.

So she was hired, somewhat to her surprise, as a proofreader.

For about five months the NEWS enjoyed the best proofreading of its history. And then Mr. Cockrell happened to need a new receptionist. He looked over the available stock-on-hand, interviewed some new talent, and finally decided that Frances would be just the ticket. She was.

If you have been a visitor at the fine new home of the Business News Publishing Co. in the last month, you will no doubt recall how pleasantly and efficiently the poised and charming Miss McNamara took care of your call.

During all this time, Frances has been picking up a little information on the side about writing for a business paper. We had been giving her spasmodic journalistic training, together with occasional stories to rewrite, just in case we might need a spare some time.

O. K. We now need a spare. And fortunately, Frances is ready and fully equipped to step into the breach. She is now an assistant editor of ELECTRIC REFRIGERATION NEWS. Not bad for six months!

And that reminds us: JEAN KERR, who was secretary to the editor during 1932 and 1933, and who learned her journalism in this office, is now Shopping Editor of the *Detroit News,* and has a by-line feature story on the front page of that metropolitan newspaper several times weekly.

* * *

How Duane Wanamaker Got His Opportunity

Earlier in this piece we mentioned the offers and opportunities which so frequently fall into the lap of the business paper man, because of his position in an industry spotlight. A good example may be found in the case of DUANE WANAMAKER, advertising and sales promotion manager of General Household Utilities.

In his younger days Duane was an advertising solicitor working the Chicago territory for GLAD HENDERSON, who publishes trade papers for the musical and radio trades.

One day Mr. Wanamaker called on BILL GRUNOW, who had just decided to branch out from the manufacturing of radio loud speakers to the making of a complete radio set.

Bill listened to the sales story, and then bellowed:

"Look here, young fella, if you know so much about advertising, you can move right in here and be my advertising manager. There's your desk over in that corner."

And that seemed to be that.

Duane looked dubiously at the dusty old desk to which he had been so summarily assigned, glanced around at the factory atmosphere with even more misgivings. And then he looked at Bill again. That settled it. He'd take a chance on Grunow.

The rest is history. Majestic radio had one of the most sensational rises in American industrial annals.

Mr. Wanamaker directed the expenditure of some of the biggest advertising budgets of all time, knocked a bunch of advertising theories into a prettily cocked hat, had the entire advertising world talking to itself and to one another, and—incidentally—made a fortune for himself.

Leaving Majestic with Bill—before the collapse—Duane was hired by another radio manufacturer; but later chose to sacrifice a very nice salary to rejoin Grunow when the latter organized what is now General Household Utilities. Duane is still doing different and startling things.

Remember, he got his start with a trade paper!

Candid Camera Catches Grunow Executives and Distributors in Action at Convention

This is how Jimmie Davin, sales promotion manager of General Household Utilities, looked to Grunow distributors seated at the back of the room during their recent convention in Chicago.

(1) "Doc" Jordan, director of the Grunow laboratories, unconsciously poses for a "Spud" cigarette advertisement by demonstrating how the first olive tastes. (2) J. H. Rasmussen (congratulate him: he has just become a papa) has to duck a soup-bearing waiter. (3 and 4) Distributors, off-guard. (5) Advertising Manager Duane Wanamaker (see the story above).

(1) Lieut. Commander F. N. Schnell, short wave engineer, and (2) Chief Engineer H. E. Kenney tune a new Grunow all-wave set. (3 and 4) H. E. Bonfig, vice president in charge of sales.

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

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CROSLEY, LEONARD & WESTINGHOUSE LINES INTRODUCED

Convenience Is Featured in 12 Leonard Models

New Improvements Appear Inside Cabinets on New Models

DETROIT—With its lower-priced series of models fitted with a number of added features and its higher-priced groups incorporating new features and refinements, Leonard Refrigerator Co. this week is introducing the 12 electric refrigerators that comprise its 1935 line.

The refrigerating system and cabinet design have not been changed, but further emphasis has been placed on the incorporation of handy "convenience" features.

Six porcelain and six lacquer-finished models are included in the line. Food storage capacities range from 4.25 net cu. ft. to 10.59 net cu. ft.

New to the Leonard line this year is the "convenience basket," a sliding container that utilizes three covered glass dishes and allows for easy rearranging of food. It is designed also for the storage of leftovers, butter, cheese, and eggs.

The PD (porcelain deluxe) series consists of four models. Model PD1059 (a two-door model) has the convenience basket, chillometer, automatic interior lighting, two Lenadors, easy cube ice tray, cold chest, vegetable crisper, service tray, bottle rack, refrigerated shelf, all-porcelain cool-

(*Concluded on Page 12, Column 2*)

Frigidaire Levels Production Curve

DAYTON—In accordance with a manufacturing program to level peak loads of production to provide greater continuity of employment General Motors Corp. has adapted three additional warehouses to store a backlog of products of Frigidaire, Inland, and Delco until sold.

The three warehouses are the old Maxwell plant on Leo St., the Hawker and Dayton Structural Steel buildings in the former Barney and Smith car works and the previous Day Fan radio building on Wisconsin Blvd.

The backlog of completed products ranges from the small lubricated bearings of Moraine products through a line of devices such as ice cube trays, running boards, motor mountings, independent wheel suspensions, shock absorbers, electric motors, refrigerators, air-conditioning units, coils, and compressors.

Eighty-eight thousand square feet of space in the Leo St. plant will be utilized for the storage of Frigidaire household refrigerators. This space augments warehouse space at Moraine City and a major part of the Day Fan radio building. Completed household refrigerators will be transported by rail from Moraine City to the Maxwell plant via private trackage facilities on the Baltimore & Ohio railroad.

Inland division will store completed steering wheels, running boards, engine mountings, and rubber ice trays for refrigerators in the Day Fan radio building.

Delco will utilize the Dayton Fabricated Steel building and the Hawker building to store independent wheel suspensions, shock absorbers, and electric motors that cannot be stored in the warehouse space in the East First St. building of the division.

Schmutz Joins Major Store Staff of Kelvinator

DETROIT—V. J. McIntyre, manager of the major retail outlets division of Kelvinator Corp., has announced the appointment of H. L. Schmutz as supervisor of major retail store activities in the mid-west.

Mr. Schmutz was formerly associated with the Jenkins Music Co., Kansas City, as general manager of the radio and refrigeration department. He has been in the refrigeration field for the past 14 years.

York Shows Loss of $815,365 During Past Year

YORK, Pa. — York Ice Machinery Corp. in its annual report for the fiscal year ended Sept. 5, 1934, and released Jan. 5, shows a net loss of $815,365 after all charges, including $442,000 for depreciation and $392,000 interest on bonds and debentures.

William S. Shipley, president, stated that gross income from trading increased over the previous year by about $225,000 but this was largely offset by loss of discount on bonds and debentures retired through a sinking fund last year amounting to $130,000, and non-recurring expenses of $70,000 in this year's statement, much of which represents the entire cost of effecting the readjustment plan.

The company closed its fiscal year with current assets of $6,848,000, and current liabilities of $597,000, a ratio of 11.4 to 1, as compared with a ratio of 9.7 to 1, in the year previous. Cash alone exceeded total current liabilities by more than $170,000. The company has no bank debts and contingent liabilities for notes receivable discounted were $200,000 less than in the preceding year. Inventories were further reduced by about $380,000.

According to Mr. Shipley, sales are currently about 20 per cent above the same period of last year, and export business is about 50 per cent better.

Sparton Distributors To Meet Jan. 18

JACKSON, Mich.—Distributors and dealers from all sections of the United States will meet here January 18 and 19 for the annual sales convention of Sparks-Withington Co., manufacturer of Sparton electric refrigerators, and radios.

Sparton's 1935 line of electric refrigerators, with new styling and new design, will be shown for the first time. New models of the company's radio line will also be unveiled, notably Sparton's leader, the improved Triolian; the Embassy, latest addition to the Sparton group, models 835, and 685, and new table models and compacts.

Special entertainment will be provided for the visitors. Principal speakers at the business session will include Capt. William Sparks, president of Sparks-Withington Co.; Harry G. Sparks, vice president; A. T. Haugh, general sales manager; E. T. H. Hutchinson, sales manager; and Guy C. Core, advertising manager.

Machine Code to Cover Air Conditioners

WASHINGTON, D. C.—Manufacture and sale of unit air-cooling equipment will be covered by the NRA code for the Refrigerating Machinery Industry, according to a recent NRA order.

The Unit Air Conditioner Manufacturers' Association had applied to the NRA to have included under the Refrigerating Machinery Industry code all air-conditioning machinery and equipment incidental thereto, built with or adapted for a cooling or refrigerating medium.

The request also asked withdrawal of the code proposed for the unit air-conditioning industry upon which public hearing had been held.

F. C. Lovelock Dies at Sydney, Australia

SYDNEY, New South Wales, Australia—An active figure in refrigeration affairs of this country, F. C. Lovelock, managing director of F. C. Lovelock, Ltd., died here on Dec. 3. His firm represented Melchior, Armstrong, Dessau Co. of New York, selling Fedders evaporators, Detroit Lubricator expansion valves, Kerotest valves and fittings, and other American-made refrigeration equipment to the Australian trade. It is understood from the board of directors of F. C. Lovelock, Ltd., that the business will be continued under revised management.

2 Westinghouse Lines Featured By Streamlining

Revolving Shelf, New Type Ice Tray Added; Prices Start at $129.50

By George F. Taubeneck

NEW YORK CITY, Jan. 7—(Special Wire to ELECTRIC REFRIGERATION NEWS) —New streamline, ultra-quiet refrigerators featuring a revolving middle shelf and an all-metal self-ejecting ice cube tray are included in Westinghouse' three lines of refrigerators which will be marketed in 1935.

Other new features of these 1935 models include a "button-touch" door latch, triple drawer-type food compartment designed for dairy products, vegetables, and fruit, the handy-tray that folds on the door and is removable for service, an enclosed fast-freezing evaporator, and a dial-type temperature control.

Prices on the streamlined models range upward from $159.50. The more conventionally styled "master" line begins at $129.50. A 5-year service contract is included.

The cabinets are all-steel construction, doors use Micarta trim and balloon-type seals, food compartments are of seamless porcelain with rust-resisting shelves of gleaming steel ribbons, and most models are available in either porcelain or chipless Dulux for outside finish.

All hardware is of modernistic cigar-shaped design to harmonize with the cabinets themselves. Like the 1935 Packards on display at the automobile show here, the 1935 Westinghouse refrigerators retain the lines which have always distinguished them—yet are distinctively streamlined. Clever designing has corrected the lines of cleavage between the component parts of the cabinet, so that from a short distance these lines seem to

(*Concluded on Page 12, Column 1*)

Automotive Equipment Is Omaha Distributor For Frigidaire

OMAHA—Appointment of the Automotive Equipment Co. of this city as distributor for Nebraska and seven counties in southwestern Iowa was announced recently by Frigidaire Corp.

The company, owned by M. L. Livingston, will wholesale Frigidaire household refrigerators, commercial refrigeration equipment, and air-conditioning units through a retail dealer organization made up of independently owned business houses and department stores in various communities. In addition, retail commercial and air-conditioning facilities will be maintained in Omaha.

L. J. Strain, former Omaha zone manager for Frigidaire Corp., is manager of the Frigidaire division of the Automotive company, according to Mr. Livingston.

Philadelphia Distributors Sell Stewart-Warners

CHICAGO — Stewart-Warner Corp. has announced the appointment of Philadelphia Distributors, Inc., as distributor for its electric refrigerator and radio line.

Both Harry Ellis, president, and Albert Hughes, vice president of the Quaker City firm, have been in Chicago conferring with Stewart-Warner officials on details of the franchise.

Refrigerator Taxes Decline During November

WASHINGTON, D. C.—Mechanical refrigeration manufacturers paid $147,376 in taxes during November as compared with $172,541 in the same month of 1933.

Frigidaire to Open Convention Series January 16

DAYTON, Jan. 9—Eighteen thousand Frigidaire dealers and salesmen will meet in convention this year a month earlier than ever before in the company's history, on the old theory that the early bird catches the prospect, H. W. Newell, vice president in charge of sales for Frigidaire Corp., announced today in calling meetings in 37 cities for the presentation of 1935 products, advertising, and selling plans.

First of the 37 conventions will be held in Dayton, Jan. 16 and 17, when distributing organization heads from the United States, Canada, and export organization headquarters in New York City will give final approval to plans for the subsequent 12-month selling period.

Following the Dayton meetings, at which a picked crew will present the convention program in its entirety, four complete convention parties will leave on special Pullmans and with baggage carloads of stage equipment, sound motion picture projection units, and 1935 models for opening dates in four sections of the country.

Crew leaders are Frank R. Pierce, sales manager; W. D. McElhinny, commercial division manager; H. J. Walker, Jr., public utilities division manager; and Lee A. Clark, sales planning manager. Each will be

(*Concluded on Page 12, Column 5*)

Graybar to Distribute Leonards in 6 Cities

DETROIT—Graybar Electric Co. will act as distributor for Leonard electric refrigerators in San Francisco, Los Angeles, Houston, Indianapolis, Columbus, and Richmond, according to an announcement made last week by Sales Manager G. Strelinger of the Leonard Refrigerator Co.

The Los Angeles branch of Graybar is under the management of H. L. Harper with J. P. Carson as sales manager and H. C. Goldrick, merchandising manager. A. H. Nicoll is branch manager and R. W. Kimberlin merchandising manager at San Francisco.

F. G. Caldwell is manager at Houston, A. J. Callaway at Indianapolis, and L. B. Westfall, sales manager at Columbus. J. H. Pearson, Jr., is manager and M. C. Beckner merchandise manager at the Richmond branch, which also operates distributing points at Norfolk under H. B. Bibb and at Roanoke under W. E. James.

Virginia Smelting Co. Names 2 Distributors

BOSTON—The Virginia Smelting Co. recently appointed Refrigeration & Power Specialties Co., 380 Brannan St., San Francisco and Van D. Clothier, 1015 East 16th St., Los Angeles, distributors for Extra Dry Esotoo and V-Meth-L for the states of California and Nevada.

Braun, Knecht, Heiman, San Francisco, and the Braun Corp., Los Angeles, former California and Nevada agents for the Virginia Smelting Co., will act as sales agents for Great Western Electro Chemical Co. beginning Feb. 1.

Flint Given Salt Lake Kelvinator Territory

DETROIT—The Flint Distributing Co., recently organized by Leland B. Flint, will operate as Kelvinator distributor in the Salt Lake City territory, according to H. W. Burritt, vice president of the Kelvinator Corp. in charge of sales.

Mr. Flint has had several years of refrigeration experience in the Salt Lake City territory, having been sales manager of a factory branch there, and later operating his own business and a leased department in the Auerbach store. E. N. Dean, commercial engineer, is on the Flint Co. staff.

Table Shelvador Models Added To Crosley Line

2 Small Boxes Use Rotary Compressor; Others Changed Slightly

By George F. Taubeneck

CINCINNATI—Crosley distributors generally come to the annual January meeting expecting to be startled. Last week-end President Powel Crosley, Jr., did not fail them, for he gave the representatives of some 100 distributorships who gathered in Cincinnati the following surprises:

1. Two new small refrigerators—2-cu. ft. and 3-cu. ft. "Table Shelvador" models—built like chest models, but having a conventional front-opening door rather than a lift-lid.

2. A hermetically sealed rotary compressor, powered by a 1/16-hp. motor, for use in the Table Shelvadors. This compressor, although it is completely housed and hermetically sealed in a derby-hat casting with a cast-iron base, may be unbolted, opened up, and serviced in the field. (All the larger sizes of Shelvador and Tri-Shelvador refrigerators still employ the Crosley conventional reciprocating compressor, using sulphur dioxide.)

3. Dichloromonofluoromethane, or Thermon, a new refrigerant, will be used in the hermetically sealed rotary compressor. This refrigerant is chemically related to Freon (dichlorodifluoromethane). Thermon is ranked in the fifth (the highest) classification of refrigerants in order of safety by the Underwriters' Laboratories.

4. Refrigerator prices ranging from $79.50, delivered and installed for the 2-cu. ft. Table Shelvador, and $112.50 for the 4-cu. ft. standard Shelvador,

(*Concluded on Page 12, Column 3*)

Air Cooling C. of C. Found Fictitious

CHICAGO — Investigation by the National Better Business Bureau has disclosed that the so-called "United States Air Cooling and Conditioning Chamber of Commerce," announced in the Oct. 17 issue of ELECTRIC REFRIGERATION NEWS and other trade periodicals, is apparently a fictitious organization.

Examination showed that none of the well-known men in the refrigeration and air-conditioning industries listed on the first announcements mailed out as "directors nominated," had given conent to the use of their names or had contributed financially to the organization.

The notices also carried the names of A. Lincoln Wisler, president; Robert Lee Cohan, attorney, vice president; and H. Stuyvesant Cord, Cord Electric Mfg. Co., secretary-treasurer.

Mr. Wisler was quoted in ELECTRIC REFRIGERATION NEWS as follows: "No contributions are to be solicited from the industry . . . It is a non-profit organization, and its purpose is to draw together the widely scattered factors in the industry, stimulate trade education, and push the commercial expansion of air conditioning." He also assured the Chicago Better Business Bureau by mail on Oct. 15 that it was not their "expectation to solicit moneys."

The checkup revealed that the address of one G. Bowser, listed as temporary secretary of the group, at 409 East 47th St. was that of a negro millinery shop.

Dee & Hill Appointed Servel Distributors in Chicago

CHICAGO—Dee & Hill, Inc., of this city was recently appointed distributor for Servel commercial refrigeration and air-conditioning equipment. The Servel equipment will be handled in addition to Hussmann Ligonier commercial refrigerators, Steiner store equipment, and Terrell Metal store equipment.

OPINIONS OF INDUSTRY EXECUTIVES ON 1935 BUSINESS IN THIS ISSUE

EXECUTIVES FORECAST NEW SALES RECORD IN 1935

Majority of Industry Leaders Foresee Higher Price Trend

(Opinions of executives of the refrigeration industry are published below and on pages 4 and 6. Executives were sent the questions appearing in columns 3 and 4 as a guide in making their predictions for 1935. Opinions of other executives will be published in the News when received.)

JOHNSTON
'Prices Have Every Right to Go Up'

Universal Cooler Corp.
Green and Melville, Detroit
Dec. 31, 1934.

Editor:

We would say that we are very optimistic in our outlook and sales should exceed those of 1934.

Prices have every right to go up.

We feel that the NRA code has rather a beneficial effect on the industry and favor its continuance with certain modifications, which experience indicates are necessary.

There is no doubt but that room coolers and other types of air-conditioning equipment will show a very material sales increase in the coming year, both on account of the interest shown in this particular development and the activity already displayed by manufacturers.

I do not know of any outstanding feature of the ELECTRIC REFRIGERATION NEWS that might be classified as the most valuable, as each department of your paper appears to me to cover its particular problem thoroughly and accurately.

G. M. JOHNSTON,
President.

MASON
'Retailers Who Concentrate Enjoy Real Success'

Kelvinator Corp.
Detroit
Jan. 7, 1934.

Editor:

Justified public confidence, increasing individual purchasing power and a clarified governmental attitude are three of the first essentials to business recovery. Any analytical comparison of these factors as they were in January 1934, with what they are today leads directly to the conclusion that 1935 will be a year of marked improvement in all lines. We feel that the electric refrigeration industry will help to lead this improvement, and that, barring conditions now absolutely unforeseen, even more units will be sold this year than last.

Our plans for 1935 are based upon a volume substantially above that for the past 12 months. In addition to the encouraging general outlook, we have noted that retailers who emphasized electric refrigeration in 1934 enjoyed a real taste of success; this experience is leading them into further concentration upon this line of merchandise. No doubt the leading selling points for household models will be convenience features, the increased value of the refrigeration dollar, and the realization that an electric refrigerator is something no housewife can afford to be without.

Any justification for lower prices for refrigerators in 1935 is ruled out by sharply advancing raw material prices, increased labor costs and the influence of the codes. All current trends point to retail sales prices above those for comparably-sized 1934 models.

The commercial outlook is by far the best in history. Long-delayed purchases of commercial refrigeration equipment will materialize in 1935, because in rapidly multiplying numbers merchants who formerly were regarded as dangerous credit risks are showing records of sound and profitable operations. The market for commercial installations is one that should show steady improvement for some time to come.

As for the air-conditioning industry, it is apparent that this year will see genuine progress. At the present time the air-conditioning market is already highly receptive, and manufacturers are also capable of meeting demand with a fine product, but sizeable sales volume is waiting upon the development of capable distributing organizations. It is unreasonable to expect that peak development will be reached this year or next, but by 1937 air-conditioning business should reach a huge volume. If there are any deterrents to this progress, they probably will lie in the operations of manufacturers and distributing groups that are not qualified to be in this field. Greatest sales volume will come first in the "profit" or business market, with residential demand developing more gradually.

What outlets will make the greatest advances in refrigeration sales it is difficult to predict. In their respective fields public utilities, department stores and small retail merchants are all looming as factors that will draw increasingly larger amounts of trade. The year should see further tendencies toward product diversification, both by manufacturers and by sales outlets. The manufacturing and merchandising facilities of refrigeration producers lend themselves admirably to certain other lines that bear consideration as possibilities for ironing out seasonal fluctuations and for spreading overhead.

G. W. MASON,
President.

CROSLEY
'Larger Down Payments And Shorter Terms'

Crosley Radio Corp.
Cincinnati
Dec. 27, 1934.

Editor:

There are a number of factors that have a bearing on the probable course of electric refrigeration in 1935. I do not like to commit myself to a prophesy; however, it is proper to analyze the situation.

Among the general economic factors are an increase in farmers' incomes estimated from one to one-and-a-half billions; an increase of approximately 16 per cent in retail sales, with additional millions of persons back at work. We have just had the largest Christmas business in several years, with sales from 10 to 50 per cent over those of last year. Various lines of industry are reported from 5 to 40 per cent ahead of a year ago. Increases in purchases of machine tools and steel for agricultural machinery are indicative of fundamental improvement. These factors should lead to further recovery and help the outlook for 1935.

Regarding some of the questions you ask, we look for a large increase in sales of electric refrigerators during 1935. Among the reasons for this is the fact that for the past 12 years the average unit price of electric refrigerators has steadily declined from $600.00 in 1920 to $170.00 in 1933, thus opening new markets at each lower price level.

In recent years the general public has become electric refrigerator conscious so that today electric refrigeration is desired by all groups. They are ready to buy electric refrigerators as fast as they come within their income brackets. Generally improved business conditions will also help increase the sales of electric refrigerators. We have doubled the productive capacity of our refrigerator division to meet the largest demand for Crosley Shelvadors in our history.

What the price trend will be depends, of course, on conditions in general, and will be governed entirely by costs of labor and materials. There probably will be a diminishing of the price differential between the larger and the smaller units.

Our business is based on a large number of smaller dealers. In addition to these, during the past two years many of the leading department stores and furniture houses have taken on Crosley Shelvadors in response to the demand for them by purchasers.

As business conditions improve there undoubtedly will be a tendency toward larger down payments and shorter terms in instalment selling. Buyers, themselves, will probably prefer such arrangements as it will be more economical for them.

Room coolers and air-conditioning equipment probably will not account for any exceptionally large proportion of refrigeration equipment sales in 1935, although, of course, this equipment will see a continual increase in demand. We look for a substantial increase in the sales of Crosley Coolrests. This market will steadily develop and it may take five years for it to attain a normal volume.

There seems to be a very definite trend on the part of both makers and sellers of electric refrigerators toward diversification of products. This is likely to continue with products that logically may be sold through the same channels.

Let me take this opportunity to express my appreciation of ELECTRIC REFRIGERATION NEWS. Among the many good features of the NEWS are the stories of outstanding sales records made by dealers, and the sales and advertising programs that made them possible. These show "how" by example. The up-to-the-minute trade news not only of distributors and dealers, but also of manufacturers and persons in the industry, is another important feature. Of real interest are the personality sketches by George Taubeneck. About the only suggestion I have to make regarding ELECTRIC REFRIGERATION NEWS is that it keep up the features that have given it its position in the refrigeration world today.

POWEL CROSLEY, JR.,
President.

BLOOD
'Codes Making Industry Sounder and Cleaner'

Norge Corp.
670 E. Woodbridge St., Detroit
Dec. 20, 1934.

Editor:

It seems that I am already on record as a prophet for 1935, as your own publication has quoted me as forecasting a 26 per cent increase, and giving the reasons for that optimistic viewpoint.

The leading points in merchandising are, in my opinion, the following:

a) Good mechanical performance and general reliability of the product.

b) Appearance and styling.

c) Useful cabinet features and accessory equipment.

Prices will probably be moderately higher in 1935, manufacturing costs will be higher, and this, together with the general unprofitable state of the business, is certainly justification and reason for moderately higher prices. We think the price differential between the smaller and larger sizes will be somewhat greater in 1935 than in 1934.

We believe the NRA Codes have resulted in some good for the refrigeration industry. The Refrigeration Code in itself has established some standards of practice tending to eliminate some bad practices.

Our opinion of retail distribution channels in 1935, in the order of their relative importance, is as follows:

a) Department stores; b) various small retail merchants; c) public utilities; d) distributor operated retail stores; e) furniture stores.

It seems that the industry has gone about as far in the direction of small down payments and long terms as it can safely go. If the financing plans of the utilities include in their make-up a provision to finance dealer paper, we believe they are worthwhile.

We don't see any especially big market for chest model refrigerators in 1935.

The activities of TVA and EH&FA have stimulated the appliance business in general and the overall effect is probably going to be a

(Continued on Page 4, Column 1)

The Questions Propounded

The following 12 questions were sent to executives of the refrigeration industry by Editor George F. Taubeneck as a suggestion for the subjects to be considered in their answers.

1. Do you think electric refrigeration sales in 1935 will be greater than those in the all-time-record year of 1934? What are some of the factors in the situation which influenced your answer?
2. What will be the leading selling points in the merchandising of household electric refrigerators in 1935?
3. Do you expect prices to go up or down? Will the price differential between the smaller and larger sizes of refrigerators increase or diminish?
4. What effect are NRA codes having upon the refrigeration industry? Do you favor their continuance?
5. What will be the relative importance of the following retail distribution channels in 1935: department stores, factory branch operations, distributor-controlled retail stores, independent specialty appliance dealers, furniture stores, public utilities, small retail merchants of various classifications?
6. What direction will instalment selling take? Smaller down payments and longer terms, or vice versa? Do you favor the financing of refrigerators, at low rates, by public utilities?
7. What future do you foresee for chest models?
8. What effects are the activities of the TVA and the EH&FA having on the industry?
9. Will the sale of room coolers and other types of air-conditioning equipment account for a larger portion of the industry's sales in 1935? Is equipment now available, practical, and marketable? How soon do you anticipate the full development of this market?
11. Do you see a trend—on the part of both makers and sellers of refrigerators—toward product diversification?
12. What features of ELECTRIC REFRIGERATION NEWS do you consider the most valuable? What additional services could the NEWS render the industry?

ALLEN
'Mechanical Performance Best Selling Point'

Westinghouse Electric & Mfg. Co.
200 East Fifth St., Mansfield, Ohio
Jan. 2, 1935.

Editor:

Probably the easiest and at the same time the most satisfactory way to reply to your letter of Dec. 17, is to answer the questions which you have asked.

1. We feel that electric refrigerator sales in 1935 will be moderately greater than in 1934. Household refrigerators have not yet reached the stage of saturation where a decline in the number of units sold each year is to be expected. Then, too, there is every indication of better general business conditions in 1935 than in 1934.

2. We feel the most important selling points in 1935, in the order of importance, will be:

a) Good mechanical performance and general reliability of the product.

b) Appearance and styling.

c) Useful cabinet features and accessory equipment.

3. Prices will probably be moderately higher in 1935, manufacturing costs will be higher, and this, together with the general unprofitable state of the business, is certainly justification and reason for moderately higher prices. We think the price differential between the smaller and larger sizes will be somewhat greater in 1935 than in 1934.

4. We believe the NRA Codes have resulted in some good for the refrigeration industry. The Refrigeration Code in itself has established some standards of practice tending to eliminate some bad practices.

5. Our opinion of retail distribution channels in 1935, in the order of their relative importance, is as follows:

a) Department stores; b) various small retail merchants; c) public utilities; d) distributor operated retail stores; e) furniture stores.

6. It seems that the industry has gone about as far in the direction of small down payments and long terms as it can safely go. If the financing plans of the utilities include in their make-up a provision to finance dealer paper, we believe they are worthwhile.

7. We don't see any especially big market for chest model refrigerators in 1935.

8. The activities of TVA and EH&FA have stimulated the appliance business in general and the overall effect is probably going to be a

Ruggedness

Copeland Condensing Units are built to render long service . . . Compressor design incorporates maximum efficiency in combination with durability . . . Crank-cases are of strong and close grained alloy . . . crankshafts are balanced . . . cylinders are honed to mirror finish . . . pistons are ground to extremely close limits.

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It is easy for the distributor to build a big business on Copeland Commercial jobs. Each one he handles is an advertisement, not only for Copeland, but for the distributor who sells and the dealer who installs.

Right at this moment there is a big opportunity for progressive distributors to secure territorial distribution rights on Copeland Commercial Condensing Units. A year-round business, steadily growing in importance, it needs and must have, men of vision, energy, integrity and business sagacity to share in the worth-while profits to be made in its service.

Write today for full details.

COPELAND REFRIGERATION CORP., Detroit, Mich.
Main Office and Factory—Holden at Lincoln Ave.
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Copeland
DEPENDABLE ELECTRIC REFRIGERATION

...say hundreds of successful dealers selling

STEWART-WARNER

New-Type ELECTRIC REFRIGERATORS

"Slo-Cycle Mechanism Ended Servicing Problem and Made Retail Profits NET"

HUNDREDS of successful Stewart-Warner dealers—the men who placed thousands of Stewart-Warner Electric Refrigerators in American homes and who have seen them set an amazing "new high" for mechanical dependability—have issued these orders for 1935: "Don't change mechanism! Its 'slo-cycle' principle has ended the servicing problem—made retail profits *net*—its proven merit demands its retention *as is*."

To these men who *know* that Stewart-Warner "slo-cycle" mechanism enables them to *keep* their profits—and to those who are in *search* of such a line—Stewart-Warner announces that the same basic mechanical principles will be retained in the new models for 1935. Cabinet refinements? Yes! Smarter appearance? Of course! New conveniences? Many! But the refrigerating unit remains unchanged!

De Luxe and Standard Models in 1935

After its outstanding sales and performance record of 1934, the Stewart-Warner line for 1935 will repeat and exceed this remarkable success. For in addition to the De Luxe models, a new group of Standard refrigerators are ready to take their place in the Stewart-Warner profit picture—popular-priced models with the feature that will make them *stay* sold—Stewart-Warner mechanical dependability!

Call your distributor now. Get off on the inside track for 1935. Get complete information on Stewart-Warner New-Type Refrigerators—De Luxe and Standard. *Don't make any commitments until you know the Stewart-Warner plan for 1935.*

Get Full Details On New 1935 Profit-Plan From Your Distributor!

STEWART-WARNER CORPORATION

1841 DIVERSEY PARKWAY, CHICAGO, ILLINOIS

EXECUTIVE OPINIONS

(*Continued from Page 2, Column 5*)

greater consciousness on the part of the public of the value of electrical appliances.

9. Room cooling and air-conditioning equipment are unquestionably going to show a larger volume in 1935 than heretofore. There probably will be considerable money spent in advertising and promoting this equipment in 1935, but, at the same time, this part of the industry will probably be pretty unsettled.

10. There will unquestionably be an improvement in the market for commercial refrigeration equipment in 1935 and for several years thereafter. Deferred buying alone represents a large stored up demand.

11. There is not only a trend on the part of manufacturers and distributors of refrigerators toward product diversification but diversification is a fact.

A. E. ALLEN,
Vice President.

Inasmuch as your letters to Mr. A. W. Robertson and Mr. F. A. Merrick were forwarded to me, my reply will serve as the Westinghouse viewpoint.

A. E. ALLEN.

POTTER

'Dealers Will Find Profits In Specialty Selling'

Western Union Telegram
Buffalo, N. Y.
Jan. 7, 1935.

Editor:

The questions you ask are probably the paramount questions in the minds of most of the executives in the industry and the fact you ask them clearly indicates how thoroughly you have absorbed the majority thought of the industry.

These questions reflect the merchandising or store keeper outlook which seems to dominate the larger factories. The more completely a product partakes of the nature of merchandise, the more stability there is in the industry, by like token, the less chance for profits on the part of dealers and the greater the need for volume in order to make profits for the factory.

Profits for 1935 will be more stable and more definitely assured to the larger and well-established factories and proportionately less for the dealers.

Department store sales should increase in the lower price brackets, and the total sales by the industry in 1935 should show a reasonable increase over 1934.

These conditions are establishing a well-defined line of cleavage between the merchandising outlook of our big volume producers and the specialty selling or direct selling outlook of what is now a minority in the industry, but consequently these conditions are throwing some of the strongest specialty dealers into the camp of the minority because, as conditions stand today, it is only through this minority that the dealers who still believe in going after business can find their opportunity for real profits.

I still firmly believe in ELECTRIC REFRIGERATION NEWS and believe it very honestly and clearly portrays the outlook of the volume producers. My New Year's suggestion is that much value would be added to your paper if you gave more thought and space to that important minority who still believe the specialty dealer has a right to real profits.

T. IRVING POTTER,
Potter Refrigerator Corp.

GIBSON

'Distributors & Dealers Will Profit More'

Gibson Electric Refrigerator Corp.
Greenville, Mich.
Dec. 21, 1934.

Editor:

First of all let me congratulate you on the excellent job which ELECTRIC REFRIGERATION NEWS has done during 1934.

Based on the many contacts which we have made so far with distributors and dealers, we feel that the 1935 electric refrigeration sales will show a very substantial increase over 1934. Without exception every distributor has advised us that they will sell substantially more refrigerators than we have set up for sales quotas.

We have developed and introduced many of the selling features which are now used generally throughout the industry, such as flat wire shelves, automatic interior light, etc., and for 1935 we are introducing the new type of evaporator, which we call the Gibson Freez'r Shelf and which we feel is a decided advantage as it materially increases the ice capacity and every tray is in direct contact with the Freez'r Shelf. It also lends itself to a much more convenient and satisfactory arrangement of shelves and we feel that is a step forward in the way of interior arrangement.

All indications point to higher prices. We would not be at all surprised to see increased prices some time in March.

As to chest models, we have not at any time felt that it was advisable to build them and for that reason have introduced a 4-cu. ft. refrigerator for the mass market of moderate income to sell in place of chests, which have a great many inconveniences.

We feel that manufacturers, distributors, and dealers will all enjoy very substantial increases in both sales and profits in 1935.

CHARLES J. GIBSON,
President.

I think the leading selling points in merchandise of 1935 will be further styling in beautifying of cabinets, greater durability of the refrigerator mechanism, and finally greater dollar value in quality merchandise than ever before.

Prices will probably not change much. They will probably be downward, unless some fundamental change comes along during the year to definitely make for increased costs.

The NRA codes have probably been of some help in stabilizing this industry generally, and their continuance is favored on a modified basis.

In our opinion, department stores will continue to better their position in the sale of electric refrigerators as compared to other outlets.

The chest models do not seem to be practical, and since their actual cost is but little less than the regular vertical 4-ft. refrigerator, we believe that they will pass out of the picture within a short time.

The TVA and EH&FA activity we believe is serving quite a useful purpose in that it is stimulating the buying of electrical appliances generally.

We believe that your newspaper serves the industry in a very admirable fashion, and cannot suggest any additional service that it could render to the industry.

J. HENRY SCHROEDER,
Vice President.

BRUNNER

'Demand Limited Only by Ability to Buy'

Brunner Mfg. Co.
Utica, N. Y.
Jan. 4, 1935.

Editor:

I believe that electric refrigeration sales in 1935 will exceed those in any previous year. Unquestionably business conditions generally are on the upgrade and useful household appliances such as refrigeration and other electric labor saving devices are bound to reflect the increased income consequent upon improved business conditions.

Household refrigeration is naturally understood better today and has a public sales appeal that gathers momentum. In other words, the public is sold on electric refrigeration and there is a definite demand for this product limited only by the ability to buy.

With the increase in demand and the added cost of labor and materials resulting from NRA Code restrictions, it is my judgment that prices are bound to rise. I believe that the utility of household refrigeration will to handle this class of paper under lower carrying charges than heretofore. Instalment financing of the sales of electric refrigeration shows a very good record and I feel sure that a plan of this type will be worked out to make it still easier for the deserving householder to purchase this equipment.

This may be affected through the activities of TVA and EH&FA, but I believe the effect of these two activities will tend to lower prices and margins which I do not believe is to the good of the industry.

A couple of years ago, the sale of room coolers and air-conditioning equipment in large volume looked remote. I believe that in 1935 this branch of the Industry will have arrived and with the improvements which have been developed during the past year, this equipment is now practical and will have a perceptibly favorable influence on the Industry this year.

Another factor widely influencing the refrigeration industry this year is the expansion of the commercial refrigeration market. This market is founded on the basis of utility and any industry so constituted is bound to expand with improved business conditions.

I think ELECTRIC REFRIGERATION NEWS is doing a good job in keeping its readers in the trade informed on the development of the industry and that the information pertaining to new developments and the assistance rendered through its 1934 columns in the servicing of models which have passed from the market, have been very valuable features indeed.

I look forward to an expanding refrigeration market, and all of the plans for our company are being based on this premise.

GEO. L. BRUNNER,
President and Treasurer.

SHEERAN

'Prices Will Both Go Up And Go Down'

Liberty Refrigeration Corp.
237 Georgia Ave., Providence, R. I.
Dec. 21, 1934.

Editor:

I have personally always felt a great deal of sympathy for those persons who through mishap were relegated to the job of long-range weather forecasters. I feel the same position relative to the refrigeration industry is even more precarious. It is only because of the thought that the grouping of personal opinions together as a whole will give some consensus of refrigeration trends that I am giving herewith replies to your questions:

I trust that you will accept them in the spirit that they are given, in that the opinions of today are not necessarily opinions of tomorrow, if in the interim changes in circumstances alter the variable factors on which they were based.

1. We firmly expect a substantial increase in 1935 refrigeration sales over 1934. There is no reason why every succeeding year or at least the next six years will not be an "all-time record year." The answer to this is that refrigeration has graduated from the luxury class and is today an economic necessity. The public is not being sold refrigerators; they are buying refrigeration from the manufacturers.

2. The successful leading selling point for 1935 merchandise will be based on furnishing dollar merchandise value for every purchase dollar. In other words, purchasing will be done to a great extent on in-built quality and durability in the refrigerator as a whole, rather than on ballyhoo advertising programs based on a mediocre product attached to a trick selling feature or gadget whose usefulness to the consumer more often than not was negatized by the inconvenience imposed when not in use.

3. Undoubtedly prices will both go up and go down. The field is decidedly separating into two classes of buyers —those who from the standpoint of necessity demand refrigeration and a price within reach of their pocketbook, and those to whom refrigeration not only is and has been a necessity, but also purchase from the standpoint of pride in ownership of a quality product.

4. We feel that the NRA codes have in a broad, general way assisted the industry, but that any imposed regulation of their type is so general in character that it creates hardships on the individual concerns because of its unimaginative application without regard to the special needs and requirements peculiar to each member. We are heartily in favor of it insofar as it has succeeded in forcing manufacturers to sell their merchandise at a profit and also in creating a minimum wage scale, as in our own particular case, factory wages have always been above such wage scale ruling.

We are and always shall be directly against the imposition of a maximum hour week, in that it is our belief that the country as a whole is only kidding itself in splitting up jobs to put more men to work and at the same time reducing their earning power to bring all to a common level of near poverty which precludes any ability on their part to purchase beyond the bare necessities of life. Insofar as the industry is concerned as a whole, we will continue to accept the general consensus of opinion with regard to such codes.

5. The department store is the logical merchandiser for the public accepted equipment which has passed through the transition from a luxury to a necessity. Retailing through a department store guarantees a purchaser ability to obtain merchandise through a reputable local seller with a minimum of middlemen markups and assessments, and a maximum guarantee which is more than a group of words, but actually entails satisfaction being given the purchaser. We grant that department store buyers are "hard buyers," in that they know values and very definitely what they want. Inasmuch as any good department store in any locality is better known and has a higher reputation with its clientele than any so-called nationally advertised product, it follows that department store buyers are hard to be convinced. The heavy intangible burdens of advertising and promotional expenditures are of no value to them as against their own local newspaper advertising under their own firm name.

We point out the very substantial yearly gains being made in department store sales as a proportional amount of the total refrigeration sales. These figures clearly indicate that department stores are getting a larger proportion of each succeeding year's business.

Furniture stores, small retail merchants, and distributor controlled retail stores may be classed next in the order of importance in that they convey the same assistance to the retail buyer to a greater or lesser extent in accordance with their setup. The distributor-dealer sales setups are outmoded in that they were primarily created to do missionary work in the field which at the present time is totally converted to the product. Their setup involves unnecessary expenses which penalize the customer on the value received.

The public utilities had a grand opportunity to assist the refrigeration industry in past times if they had only remembered that they were selling current load primarily rather than merchandise. Had they set up display space for all brands represented in their locality for impartial assistance, they could have worked wonders. Instead the majority thoroughly messed up the situation with special discounts, long-term instalment payments, and every other device that a poor merchandiser uses to combat competition. The absurdity is even more apparent when you consider this type of competition was against private enterprise in their own locality which was not only selling load building equipment for their own advantage, but also purchasing load from them.

The factory branch has no real future in the retail field. Its only justification is as original warehouse or to secure representation in a locality where reputable independent representation cannot be secured.

6. We refuse to predict instalment

(*Concluded on Page 6, Column 1*)

Sloan Says Fundamental Economic Laws, If Left Alone, Will Bring Recovery

General Motors Corp.
Broadway at 57th St., New York City

Editor:

I have for some time past contended that there is very definite evidence that the deflationary forces, which have played so important a part in the world's industrial depression, largely spent themselves in the summer of 1932 and that slowly but surely, there has been developing since that time a foundation for world recovery. I might call that "Fundamental No. 1."

Next, we must appreciate, and this fact is frequently forgotten, that it is impossible to violate successfully, natural economic law, although we can formulate economic policies that modify the effects of such law. These policies can accelerate or decelerate the normal process of depression and recovery.

Applying this thinking to the economic policies of the United States and limiting the discussion to such policies as affect industry, in which I am more directly concerned and have better opportunity for observation, I am inclined to think that what we have done has been, on the whole, more harmful than beneficial. We have decelerated rather than accelerated the normal processes of recovery. That is "Fundamental No. 2."

I am convinced, hence I am encouraged, and I believe all have a right to be encouraged, over the fact that there is developing at the moment, a sounder approach to the solution of these vital problems. Our thinking is becoming more in harmony with the natural economic law to which I have previously referred.

There is a greater appreciation of the importance of the wealth creating payroll, a yardstick that measures our progress toward recovery, as distinguished from the unproductive payroll—which adds to our future burdens and, if continued too long, ultimately leads to bankruptcy.

If I am correct in my evaluation of the present trend of thought and that trend is interpreted, either into action or lack of action, and one is as important as the other, then we can proceed down the road that leads to sound recovery with real confidence and at an accelerating rate. That is "Fundamental No. 3."

I have stated the fundamentals as I see them. The question next arises as to the interpretation of these fundamentals. The fact that there is a foundation not only for recovery but the possibility of accelerating the processes of recovery, and a broadening intelligence as to the principles involved in the solution of the component problems, justifies the belief that we are making progress, and that conditions in 1935 should be somewhat better than in 1934.

My belief is that they will be somewhat better, but that belief is definitely predicated upon the conviction that the essential things to encourage and promote creative effort, will be done, and that the contrary will not be done. To my mind, that is the real question involved in the problem.

ALFRED P. SLOAN, JR.,
President.

SCHROEDER

'Increase Will Be Caused By Better Values'

Sunbeam Electric Mfg. Co.
Evansville, Ind.
Dec. 20, 1934.

Editor:

I think there is no question but what there will be a very substantial increase in refrigerator business in 1935 over that experienced in 1934. The main factors that will be responsible for this increase as we see it are better general business conditions, and still better values in refrigeration that will be offered.

eventually make it unnecessary for so-called "leader lines" in the smallest sizes and that as the industry settles down each unit will be priced on a basis of cost rather than on the basis of expedient merchandising.

It is my judgment that eventually household electric refrigerators will find their distribution through all allied retail channels, including department stores, dealers, public utilities, and radio stores and that it will gradually drift from factory and distributor controlled channels, but it is doubtful if this change will become general during 1935.

Another factor which I believe will influence the industry to greater sales in 1935 is the greater willingness on the part of the finance companies

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The Distributors are Saying

"WATCH GRUNOW"

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THE NEWS OF 1933 • THE SENSATION OF 1934 . THE OPPORTUNITY OF 1935

EXECUTIVE OPINIONS

(Concluded from Page 4, Column 5)

selling trend particularly as it does not affect our own manufacturing policies. We do believe that inasmuch as small down payment long-term paper was never the purchaser's demand, but rather the last concession of manufacturers who were overloaded with merchandise and took this as a last desperate resort to dump their goods. The future of this condition lies in the ability of the industry as a whole to get its feet on the ground, forget monopolistic ideas for their individual brands, and face facts.

We believe the only sound policy on which sales may be predicated is that the customers be sufficiently sold on the product and enough desirous of owning it that they are willing to place with their order an amount of money which gives them a very substantial initial equity and interest in the purchase. We do not favor the financing of refrigerators at any rates by public utilities.

7. We see no future for the so-called chest models. Retrogression in design and development of a product has never proven successful. We have always regarded them as a detriment to the refrigeration business inasmuch as they were ficticiously low priced by creating a unit and an impractical cabinet and cutting down profits to the merchandiser.

8. We cannot express any opinion on the activities of the TVA or the EH&FA, inasmuch as any effect they have on our particular business is so vague that it has never come to our attention.

9. We do not care to comment on this situation. We are not interested in entering the field at the present time.

10. We expect a slight improvement in commercial refrigeration equipment sales but do not look for any substantial jump. We do not care to predict future possibilities of this market, but believe that it will never make the showing that domestic lines are making.

11. We see a definite trend toward product diversification on the part of the sellers. Whether their demand for such a diversification under the single brand will react to any great extent on refrigeration manufacturers is questionable. If such a demand does become apparent, it will be on companion lines which are off-seasonal with refrigeration in character.

12. Without any attempt to give a puff to the ELECTRIC REFRIGERATION NEWS, we state in all sincerity that its total makeup is extremely good. Personally I would like to see the pages devoted to technical data and features expanded. In addition, I believe, departments should be created for service men, incorporating practical advice to them in handling and servicing of refrigeration equipment.

We take this opportunity to congratulate the NEWS on the re-incorporation of your Personal Column.

L. SHEERAN, Supt.
Engineering & Production.

MARTIN
'Price Spread Should Be Drawn Together'

Uniflow Mfg. Co.
Erie, Pa.
Dec. 26, 1934.

Editor:

This is in reply to your letter addressed to our President, Mr. C. A. Kuebler, who has been away from the office since about Dec. 1, on account of a minor operation and will not be back in time to give you a reply to your letter. Therefore, I am writing you as pinch-hitter for Mr. Kuebler.

Owing to the fact that confidence is being so rapidly re-established and that there are so many millions of dollars now available for the financing of time payment sales and also that so many prospective purchasers of electric refrigeration are now fairly well out of debt, by that I mean they have paid for so many things that were bought on the time payment plan, they are now ready to assume additional obligations.

We believe that domestic refrigeration sales for the year 1935 should exceed those of 1934 by perhaps from 15 to 20 per cent. We also feel that in 1935 better refrigerators will be sold, that is, the higher priced ones, and that the public will be greatly influenced in their choice of electric refrigerators by individuality and beauty of design and general features of the particular refrigerator they are considering. We, of course, expect prices to go up. We feel now and have felt for the last three years that electric refrigerators are selling at too low a price and the profit margins for the manufacturer are so thin that it has become a dangerous business for the smaller manufacturer to engage in. Price advances should be made on the smaller sizes and that spread or difference between the smaller numbers—4½ and 6 ft. boxes, should be drawn more closely together to encourage the sale of the larger units.

NRA Codes have undoubtedly forced prices of raw material and labor upwards to a very much greater extent than price advances made thus far will take care of. The NRA Code properly administered no doubt is very good, but if it is only half administered, as has been done to a great extent in the past year and a half or so, it doesn't seem to do the smaller manufacturer very much good; in fact, has increased our costs, saddled us with all the liabilities of the Code but has not, as yet, produced any assets.

In connection with question No. 5 - we do not feel qualified to even express an opinion. Most of our business is done through department stores and furniture stores direct, we do not have any factory branches or distributor-controlled retail stores and, therefore, are not in a position to venture an opinion as to how these sources of outlets are working out.

The same applies to question No. 6. We sell all of our merchandise to well financed distribution outlets and they, in turn, have their own time payment set-ups. I believe, however, that they have been working toward smaller down payments and making terms to suit the customer.

We see no future for the chest models. It has been our experience that the cost of manufacturing the chest model, as compared to a regular refrigerator, is so close to the regular refrigerator cost that the customer can easily be influenced into purchasing a refrigerator 4 or 4½ ft., at the higher price. It is my firm opinion that chest models today are only used as switch models.

Answering your question No. 8, we have not manufactured chest models for distribution in the TVA and EH&FA territory, so are not qualified to express an opinion as to the results they are having in the industry.

Replying to your question No. 10, we do expect a decided improvement in the market for refrigeration equipment but believe that for the next two or three years the household market is going to continue to be the market that will make for the high increase in total refrigeration sales. We do see a trend on the part of the manufacturer toward product diversification. Of course, our company has always been a strong believer in product diversification. We manufacture not only electric refrigeration but water systems, water softeners, beer pumps, beer cooling and milk cooling equipment, and several other items that make for more even production and sales curves. There are very few dealers, of course, who have depended upon the sale of electric refrigeration alone to carry them through the year. Nearly all of them have handled other products.

We feel that the editorials in your ELECTRIC REFRIGERATION NEWS are not only interesting but seem to hit the nail on the head. The news service which you give the industry, is indispensable to it and we hope that your paper will continue to wax stronger and bigger as time goes on.

MICHAEL A. MARTIN,
Vice Pres. & Gen. Sales Mgr.

TEMPRITE
Instantaneous Cooling
"The leading cooler for water, beer and other beverages"
Write for Catalog
Temprite Products Corporation
(Formerly Liquid Cools Corporation)
1349 Milwaukee East Detroit

Swope Says Appliance Sales Boosted Volume For Electrical Industry

General Electric Co.
New York City

Editor:

The volume of electrical manufacturing business during 1934 has been more than 30 per cent greater than in 1933. Consumption of electricity throughout the United States has been approximately 7 per cent greater than in 1933 and is almost up to the maximum consumption in the years 1929 and 1930. This increase has been due largely to the increased use of electrical appliances in the home.

The electrical manufacturing industry, and industry in general, has felt most seriously the failure of the revival of orders for capital goods, but with the increased use of electricity and consumers' goods in general, capital goods must also increase.

For the year 1935, we look forward to a continued improvement in business.

GERARD SWOPE,
President.

Price Differentials by Seasons Proposed as Sales Curve Leveler

By Harry Alter
Chicago Distributor for Grunow

For the past several years the household refrigerator industry has struggled with the self-same problem each year—a sales curve peaking sharply in April, May and June. So sharply does this curve peak that the business is truthfully referred to as a "feast or famine."

I have a plan which if adopted by most manufacturers, will in a relatively short time level out the annual sales curve—and the huge advantages of a level sales curve in the refrigeration business is readily apparent.

Here are just a few benefits:

1. More regular and steady employment for thousands of workers in the refrigerator factories.

2. Greater manufacturing economies due to well planned production schedules.

3. Lower cost distribution from maintaining well trained year round sales organizations.

4. Reduced costs of refrigerators to the public because of lower manufacturing-distributing expense.

5. Larger industry sales volume because of sustained all year sales effort.

Now for the plan itself. I argue my case on the theory that in March, April, May and June, refrigerator factories can't make them fast enough and during the other eight months they have a tough time getting any production at all. Therefore, the factory, distributor, and dealers all would be better off by selling more boxes in January, February, August, September, October, November, and December. The industry would be better off undoubtedly—so much so—that a small sacrifice in profit would still be desirable.

So why not sell the products of the factories at a lower price during the so-called dull months? Certainly that's not new and we know it works, but what is new is the scientifically prepared well organized month-by-month variable price schedule. Each manufacturer would and could still set his own prices—but let them agree on the monthly variable—and here's a concrete example, best illustrated with a fictitious price list of a mythical company.

Never-Cold Model No. 542 Deluxe
Effective Jan. 2, 1935, f.o.b. Factory

Month	Variable List Price	Distributor Cost 50%	Dealer Cost 40%
January ..	$190.00	$ 95.00	$114.00
February .	194.00	97.00	116.40
March	200.00	100.00	120.00
April	200.00	100.00	120.00
May	200.00	100.00	120.00
June	200.00	100.00	120.00
July	194.00	97.00	116.40
August ...	192.00	96.00	115.20
September .	190.00	95.00	114.00
October ...	188.00	94.00	112.80
November .	188.00	94.00	112.00
December .	190.00	95.00	114.00

By varying the price of the Never-Cold model No. 542 for each month, the Never Cold Co. obtains a good average price for the year—and certainly offers inducements to the public, dealers and jobbers to buy in dull months—the desired end.

To put such a plan in operation the leadership of a great trade journal like ELECTRIC REFRIGERATION NEWS, is essential.

All that the industry need do in unison is to decide on the variable percentages between different months—how much lower the list price should be in January than in April. For that purpose monthly sales of the industry during the past year could be studied and a uniform differential agreed upon which all factories would follow.

The public, as well as dealers and jobbers should be told the whole story quite frankly—in fact, the plan should be merchandised to the public by means of "out-of-season" advertising, with headlines like this:

For January "Buy now—next month all prices will be higher."

For September "Now you can save, seasonal price reductions this month."

Both wholesale and retail salesmen for any and every make box would have a powerful closing sales argument—"Save Now."—a sales argument always good to use in bad times or boom times.

This method of pricing is done in other lines, notably furs—sold to the public and trade at lower prices in August than in November—but there is no scientific or uniform practice in the pre-season or post-season mark downs in the fur industry.

However, a uniform price differential in the refrigeration business observed by all manufacturers is bound to put the idea over, both with the public and the trade. And this accomplished, "feast and famine" merchandising would be replaced by "normal daily nourishment" to all members of the electrical refrigerator industry.

Fake Subscription Agents Use Printed and 'Bonded' Receipts

Business News Publishing Co.
5229 Cass Ave., Detroit, Mich.
Dec. 29, 1934.

The Martin-Rosebury Corp.
33 West 42nd St.
New York, N. Y.

Mr. T. M. McBroom, P. O. Box 1041, Clarksburg, W. Va., has complained to us that he accepted your *bonded* receipt for No. C7485 in payment for a $3.00 subscription to ELECTRIC REFRIGERATION NEWS. Mr. McBroom wrote you under date of Nov. 21, 1934, and received your reply dated Dec. 8, 1934, stating that you had no agents authorized to sell ELECTRIC REFRIGERATION NEWS.

Mr. McBroom takes the position that it is your duty to chase frauds issuing *your receipts*. We are writing to inquire as to the significance of such receipts.

We have received a number of complaints recently regarding the activities of fake subscription agents. In fact, we have had more complaints during the past three or four months than in all the previous history of the company.

We have published several notices warning subscribers against the payment of money to strangers claiming to be representatives of this publication and we believe that it will be necessary to warn subscribers against *all* subscription agents if these frauds continue.

We will appreciate your comment.

F. M. COCKRELL.

The Martin-Rosebury Corporation
33 West 42nd St.
New York City
Jan. 3, 1935.

Publisher:

Replying to your letter of Dec. 29, the description of the receipt that you give as to serial letters leads us to believe that Mr. McBroom has met up with a fraud.

We agree with Mr. McBroom that it is to our interest to endeavor to uncover any fraud issuing a receipt of ours and we are prompt in such action when such things develop but since we do not possess super-human powers we are not always able to locate a fraudulent agent.

From time memorial publishers have suffered from activities of frauds and will continue to suffer from their activities. By the time your splendid publication is five years older you will have discovered that hundreds of occasions will arise where you, too, will have been the victim of fraudulent subscription agents who have gone out and collected money claiming to be a representative of yours. The National Publishers Association has worked very hard in running down frauds and if you are not a member of it I would recommend that you look into the record of this association which is supported by America's prominent publishers. Their address is 232 Madison Ave., New York City, and your communication should be addressed to Mr. F. E. Ware.

R. W. ROSEBURY.

Comment: We may live long and learn much about fake subscription agents, but right now we would like to know what is meant by your "bonded receipt." Will you please answer this question?

PUBLISHER.

Dec. 29, 1934.

Associated Trade Press
9 S. Kedzie Ave.
Chicago, Ill.

We have a complaint from James J. Kline, 827 E. Adams St., Springfield, Ill., that on Oct. 5, 1934, he paid a subscription agent by the name of T. C. Riley, $1.00 for a 6 months' subscription to ELECTRIC REFRIGERATION NEWS.

This man also collected from Mr. Kline for a subscription to *Electrical Record* and issued a printed receipt No. 2052 apparently furnished by your company.

A plain stock receipt form was used for the subscription to ELECTRIC REFRIGERATION NEWS.

We have already sent you a marked copy of ELECTRIC REFRIGERATION NEWS containing a report of a subscription agent using your name who collected from at least one other subscriber, furnishing the receipts in the name of your company.

Mr. Riley is described as a man of about 5 ft. 10 in. in height, quite slender, weighing about 140 lbs., dark complexion, age about 45 years.

Will you please let us have your comments?

F. M. COCKRELL.

Associated Trade Press
Magazine and Trade Periodical Specialists
9 South Kedzie Ave.
Chicago
Jan. 3, 1935.

Publisher:

In response to your letter of the 29th ult., wish to advise you we do not have a T. C. Riley in our employ and *Electrical Record* has not been published for the past year and a half, having been consolidated with *Electrical Contracting* about that time.

I would suggest you have Mr. Kline swear out a warrant for the arrest of this Riley and when this has been done, advise us and in the event we are able to locate this party, we shall be very glad to cooperate with you in having Riley apprehended.

Enclosed you will find one of our up-to-date lists and you will note we do not list your publication thereon, although we feel quite sure we could secure some nice business for you.

Thanking you for calling this matter to our attention, we are,

JOHN W. COMPTON, Gen. Mgr.

Comment: Are we to infer that you accept no responsibility for a printed and serially numbered receipt bearing your name?

PUBL'SHER.

New Type Meter Clock Made by Coin-A-Day

CLEVELAND — The Coin-A-Day electric clock, manufactured for Coin-A-Day Inc., under its designs and patents by the Eltime Clock Co., division of the Electric Auto-Lite Co., Toledo, differs from the average coin-controlled electric refrigerator meter in that it does not have to be a part of the refrigeration system.

Every 24 hours it sounds a warning for the deposit of a coin. The buzzing does not stop until the coin has been inserted.

The company suggests that a contract should stipulate that "the clock is loaned for the purpose of accumulating the amount needed to pay for the article purchased—that the customer agrees to deposit 25 cents daily and bring the coin-box to your store every two weeks or every month to have the amount therein removed and credited to his account . . . . and should the customer fail to carry out the terms of the contract, you are authorized to apply the down-payment to cover the cost of the clock . . . . it should be understood that the clock only remains the property of the customer, after the final payment has been made on the product purchased."

B. & O. Radio Increases Norge Territory

NEWARK—B. & O. Radio, Inc., distributor of Norge refrigeration, oil burners, washers, and stoves has added Hunterdon and Warren counties in New Jersey to the Norge territory, according to Ben Oppenheim, president of the company.

The B. & O. Radio company recently formed a new commercial refrigeration department under the direction of E. Brockmeier and a new Norge Broilator division under the management of Andrew Henriksen.

Wholesale Code Budget Set at $50,559

WASHINGTON, D. C.—Total budget for the administration of the NRA code for the Electrical Wholesale Trade has been set at $50,559.02, it was announced recently by the Code Authority.

Assessment is to be based on the net sales for the calendar year 1933, with a $25 minimum plus an assessment at the rate of 1/40 of 1 per cent of the net sales in excess of $50,000.

Application was submitted by the Code Authority for approval of its budget and basis of contribution for the period from Aug. 23, 1934, to Aug. 23, 1935.

2 New Dealerships Are Opened in Buffalo

BUFFALO—Two new retail stores to handle refrigeration, radio, and electrical appliances have been opened here recently by A. C. Van Buskirk and Harry Shaprow.

Mr. Van Buskirk, formerly sales manager of the Neal, Clark & Neal store, is operating Vanbee's, Inc., at 682 Main St., and Mr. Shaprow, previously sales manager of Goold Bros., has opened Shaprow, Inc., at 927 Broadway.

Hathaway Joins Staff of Paramount Electric

PHILADELPHIA—B. G. Hathaway, formerly of the firm of Victor Sales of this city, is now Philadelphia and Pennsylvania representative for the Paramount Electrical Supply Co. of New York, distributor of refrigeration and electrical equipment. Previously, Mr. Hathaway was also connected with the Philadelphia branch of Melchior, Armstrong, Dessau Co.

DO THEY ADVERTISE IT TO THE TRADE?

Only the manufacturer who KNOWS that his product will give satisfactory service has the nerve to ADVERTISE it repeatedly in an industry publication

The reason is this. False or exaggerated claims when published in a trade paper invariably have the effect of arousing competition to defensive action. Competition quickly sees to it that such false claims are refuted. The manufacturer who cannot prove his case knows that it is better for him not to advertise than to face the barrage of criticism which would inevitably result were he to do so. It is only the manufacturer having genuine faith in his product who will fearlessly and repeatedly assert his claims in *print* where such claims may be read by his employees, customers, prospects and *competitors* alike.

That's why you can depend upon manufacturers who advertise regularly in ELECTRIC REFRIGERATION NEWS. That's why it is seldom necsssary for us to censor an advertisement. The real censorship is imposed by readers—and no one knows that fact better than the advertiser.

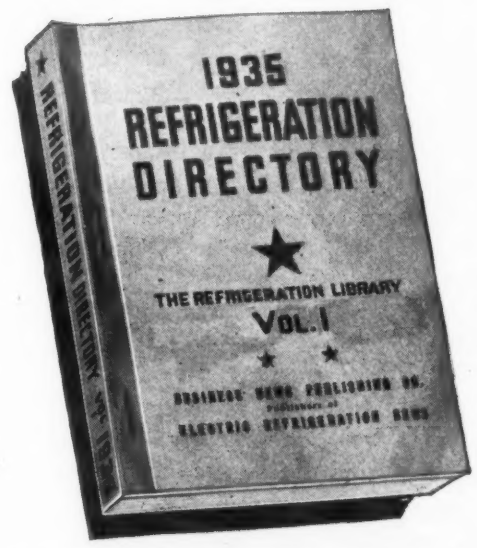
That's why the names and products regularly advertised in ELECTRIC REFRIGERATION NEWS have become the standard of comparison for the industry.

That's way the industry has confidence in the regularly advertisers and instinctively senses that something is wrong when a manufacturer fails to use this established medium for industry news and information.

That's why your advertisement in the 1935 REFRIGERATION DIRECTORY AND MARKET DATA BOOK stamps your part or material as reliable —as something in which you have full faith and confidence. Otherwise you wouldn't be represented in this way. And that's the very attitude your market takes when they look through the Directory to find some source of supply.

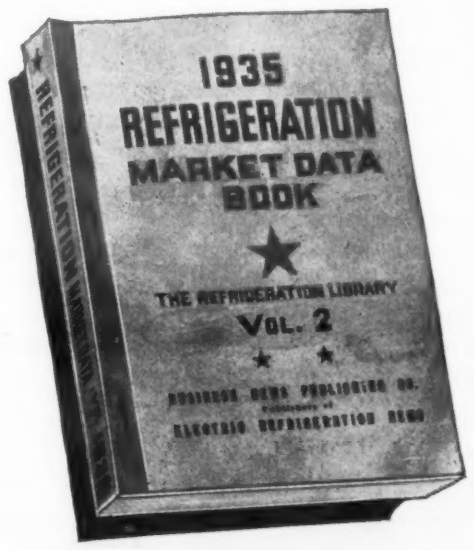
And do buyers look through the Directory for such purpose? There's no longer any argument about this question. It's a proved fact. The REFRIGERATION DIRECTORY AND MARKET DATA BOOK is the official buyer's guide and recognized register of all trade-marked refrigeration products. Every company which supplies the industry is listed (and without obligation) under its proper classifications. But to what concerns does the buyer turn—those merely listed or those which have such confidence in their product that they are led to tell the trade all about it with a real sales message.

Do the wise thing. Be represented in the 1935 REFRIGERATION DIRECTORY AND MARKET DATA BOOK. The cost is low—only $100 a page, $180 for two pages, $320 for four pages. Forms close January 20th. Time is getting short so reserve your space now,



VOL. 1—1935 REFRIGERATION DIRECTORY

Recognized industry register of all trade-marked refrigeration and air-conditioning products. Four complete sections— (1) Alphabetic list of manufacturers; (2) Index of trade names; (3) Classified list of refrigeration equipment, parts and materials with all sources of supply; (4) Geographical directory giving name, address, telephone number, and products of manufacturers. Independent service companies and jobbers of supplies, parts, and materials included.



VOL. 2
1935 REFRIGERATION MARKET DATA BOOK

Veritable encyclopedia of information on refrigeration and air-conditioning industries. All known facts and figures recording development up to date. Systematically arranged and tabulated. Subdivision by territories and types of products for market and sales analysis. Included are household, commercial, and air-conditioning sales statistics—survey of distributive channels—merchandising activity—potential market and other essential data.

The 1935 REFRIGERATION DIRECTORY AND MARKET DATA BOOK—in two volumes—will be issued Feb. 20. Price $5.00 per set postpaid in the United States and all countries in Pan-American Postal Union. In combination with a year's subscription to ELECTRIC REFRIGERATION NEWS, $6.50. For all other countries the price of the books is $6.00. In combination with the News, $9.00. Canadian subscribers are required to pay a tariff and excise tax which amounts to $2.59. These extra charges will be collected by the Canadian postoffice at the time books are delivered.

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VOL. 14, NO. 2, SERIAL NO. 303, JANUARY 9, 1935

An Early Start for 1935 Business

EARLY birds may get the worms, but the electric refrigeration industry, which is getting off to the earliest start in its history this year, has its shooting irons loaded for much bigger game than worms. The industry is gunning for a sales record of 2,000,000 units in 1935—a mark which definitely would establish refrigeration as one of the topmost industries in the nation.

In previous years the refrigeration season hasn't got under way until early spring. Salesmen have always insisted that until the springtime's gentle breezes stir the newborn buds in the treeses (and, incidentally stir both the poets' and the young man's fancy) housewives simply could not be approached on the subject of the protection of health through proper food preservation.

Selling refrigerators is a grim business to factory sales managers and distributors, however, and they have refused to take any stock in this poetry-and-weather stuff. An electric refrigerator, they say, performs a useful year-'round function, and salesmen should be able to sell it the year 'round.

Plans Devised in 1933

By the end of 1933 the cold-blooded sales managers who stubbornly refused to believe what every salesman knows for a fact, viz.: that "you can't sell refrigerators in cold weather," just about had their case ready to take to court. They had perfected and polished the economy story, dressed up the bacteria and food spoilage story, and had devised "spring dating" and "kitchen rental" plans whereby a customer could have a refrigerator installed in the dead of winter and not have to begin paying for it until warm weather. ("The Kelvinator scheme of 'renting warehouse space in your kitchen during the winter' was one of the cleverest promotion stunts of last year.")

But unforeseen events prevented the sales managers from getting an opportunity to give their theory a fair trial. For one reason or another most of the leading manufacturers got off to an unusually late start last year.

Norge swung into its campaign in February. It was March before Frigidaire and General Electric got under way. Not until April did Westinghouse have its new models out and its retail sales campaign started.

The Lesson of 1934

As a result, the public was ready before the industry was. According to many reports, prospects came into showrooms and practically took refrigerators away from surprised dealers.

Factories were caught flat-footed. Shipping departments were frantic trying to keep up with the steadily mounting stocks of unfilled orders, and trying to placate distributors and dealers who were crying into long-distance phones from all over the country.

Memories of that wild period have made company presidents sternly set about the task of getting their houses in order early this year. They have succeeded so well that the industry is off to an earlier start this year than ever before.

Kelvinator, nearly always first off the mark, had its new models out and its meetings well started before the end of 1934. Norge left the post early, too, and its dealer meetings are now in progress.

Crosley Starts with the Calendar

Crosley duplicated its 1934 record by showing new models during the first week of 1935. But in January, 1934, Crosley had only new models. Its promotion campaign was yet to be formulated and enunciated. This season, due to the strenuous efforts of Advertising Manager G. H. Corbett, Crosley distributors were shown a complete set of literature, publication advertising copy and layouts, dealer helps, and a new sales manual at their convention last week. They have nothing left to do now but go out and sell refrigerators.

Westinghouse has its new line ready now—*two months ahead* of last year—and displayed it for the first time in New York City this week.

Frigidaire dealer meetings are scheduled to start this month, almost six weeks ahead of last year.

General Electric's announcements and dealer meetings will be earlier this year than last, according to advance reports.

So everything now seems set for sales managers to demonstrate that refrigerators *can* be sold in cold weather. The Nema sales reports for February and March will be awaited with interest by the entire industry.

WHAT OTHERS SAY

Washington Now Offers Co-operation

AN encouraging change in the attitude toward private enterprise now prevails in Washington. Business leaders have been invited to cooperate in the improvement of NIRA and have accepted. During the past weeks the President has reassured the utilities somewhat. He has offered to limit the extent to which the government expects to go into the power business. He has, in effect, stated the terms of a truce. He has expressed the desire to avoid litigation to fix the legality of the federal power projects. The primary basis for this changed attitude is the acquired knowledge that recovery will continue only if private enterprise prospers and creates more employment.

Despite the disappointment in the reception accorded the memorial presented by Mr. McCarter and the intrusion of the President into the New York municipal rate situation the above statements are on record. It is natural that there should be disappointment in the industry over these incidents, but the attitude expressed by the President at recent press conferences after his conversations with Messrs. Willkie, Carlisle, and Arkwright should not be forgotten.

Leaders of industry have no desire to fight the government. However, they cannot agree to the violation of principles which they believe to be sound nor to the destruction of their enterprises through unfair governmental competition or destructive legislation. Their greatest desire is to bring about recovery and prosperity and they will now work whole-heartedly to help produce a constructive program to this end.

Utilities, especially, will welcome government cooperation. Their goal is the same as that of the government, to increase the electrification of America just as rapidly as is practicable. They, too, believe in the social value of electricity and have built their business on this principle. They have always agreed to the policy of expecting only a fair return upon the investment required to render the service. They believe they are most competent to electrify this country and reject the idea that it is necessary or in the public interest for the government to go into the power business.

In recent years the power "yardsticks," the power relief-projects, and other governmental utility activities have injured the industry and prevented it from developing its business. These experimental projects were overpublicized, were used as propaganda that seriously affected the credit standing and public relations of the private utilities, are experimental and in the initial stages of development only and afford as yet no facts to measure any values. They were too largely accepted as accomplished facts instead of idealistic conceptions. There seemed to be no limit to federal power commitments. Recent and contemplated court actions brought matters to a crisis. The industry had to take action.

The utilities ask only for a square deal and a chance to show what they can do. They will sell their service; they will expand their facilities; they will make every effort to bring about business recovery and to extend the social benefits that accrue through electrification. They will use the limited yardsticks of the government and will use all facts they may produce that will enable them to operate better or more economically or to get more business and more employment. Electrical men believe that the electrical industry can take a major role in bringing about recovery and advancing social standards. Government cooperation instead of government competition will remove the greatest handicap to effective action in carrying out their plans in the public interest. This truce should be preliminary to a new deal that is a square deal for utilities—*Electrical World*.

LETTERS

On Recommending Schools

365 14th St.
Brooklyn, N. Y.

Editor:

I have been referred to you by H. W. Anklam of the General Electric Co.

Mr. Anklam informs me that you are compiling a list of recommended training schools for refrigeration engineers. I am very much interested in this field and also in air conditioning and I should like very much to take a course of training in either one or both.

I should appreciate it very much if you would send me the name and address of a school that is unquestionably the best. I have been in the electrical field for the past five years, and I have had a very thorough technical training.

The cost is not as important as the reputation and standing of the school.

WILLIAM C. MORRISSEY.

Answer: See below.

1719 P. St.
Sacramento, Calif.

Editor:

I am writing to you for information on a good correspondence course in Refrigeration and Air Conditioning.

Yesterday, I asked Professor Perry of Mechanical Refrigeration for the University of California and he advised me to write to you; as you had recently commented on the various schools giving courses in one of your editorials. He said that you could probably better inform me.

I am enclosing a letter I received from one school and which I think would be the best. Any information or advice will be greatly appreciated. I might add, if and when I find the course for which I seek, would it be advisable to purchase a standard refrigerating unit to work on as I progress with my studies.

LEROY G. HALL,

Answer: We have not yet had an opportunity to make a thorough study of this subject and we are therefore really not in a position to make recommendations.

We have had some correspondence with the O. F. Schoeck school of Alton, Ill., and you will note an advertisement of this school in the classified column of the NEWS. In a recent letter, they promised to send us a copy of their course of instruction for inspection. Up to the present time, however, we have not received any of their material.

The Utilities Engineering Institute, Wells at Kinzie St., Chicago, Ill., has been advertising in ELECTRIC REFRIGERATION NEWS for several years. One of our staff writers called on them, unannounced, a few months ago and wrote an interesting article regarding his observations. You will find it in the June 6, 1934, issue of the NEWS. Our reporter was convinced that the school is well equipped to give its students a good training.

Recently we examined the course of study prepared by the Refrigeration and Air Conditioning Institute, 2158 Lawrence, Chicago, Ill., (also known as the Chicago Engineering Works) and portions of this course have been published in recent issues of the NEWS (with permission of this school).

Since this course is the only one which we have had an opportunity to examine, we have no real basis for comparison. We are very much impressed with the material furnished by this school and feel convinced that they give the students a high grade service and good value for the money.

Error in a Caption

Refrigerating Machinery Association
York, Pa.

Editor:

Please refer to your issue of Dec. 12, 1934.

There appears in that issue on page 2, two photographs under the caption "Thrashing Out A Code Question In Washington." The people appearing in picture numbered 1, from left to right, are as follows: Mr. Donald, managing director of Nema, Mr. Finnie, Mr. William B. Henderson, secretary of Refrigerating Machinery Industry Code Authority, and myself.

I trust that a correction will be made.

S. B. MCNAUGHT,
General Counsel.

More Service 'Dope'

Baker's Electric & Refrigeration Shop
Audubon, Iowa

Editor:

I am just completing two years of reading the NEWS, which I receive through a news stand, and I want to say it is indispensable to anyone engaged in selling or servicing refrigeration.

We are more than interested in the service dope in the NEWS and would like to see more of it.

CHARLIE BAKER.

Specifications Separately

General Electric Co.
1 River Road
Schenectady, N. Y.

Publisher:

Thank you for copies of ELECTRIC REFRIGERATION NEWS containing specifications on air conditioning equipment.

With reference to your proposal to publish specification data separately, we feel that this would be most helpful. For our purposes, separate books—one for household, one for commercial and one for air conditioning specifications—would be most convenient. Our Air Conditioning Department, for example, would be interested in specifications on air conditioning equipment only.

E. J. KLOCK,
Market Research Division.

Holmes & Allison History

342 Madison Ave., New York City
Dec. 28, 1934.

Editor:

I have your letter of Dec. 26 in respect to the Domestic Electric Refrigerator and Holmes Corporations.

The history of this development is rather interesting for unless I am greatly mistaken H. R. VanDeventer, Inc., comprised of myself and associates, were one of the first to develop in America and publicly exhibit at the electrical show in 1926 a hermetically sealed unit of a household type. If I am not mistaken this machine made its appearance prior to General Electric, Westinghouse, and other well known makers who have since standardized on this type, which is apparently supplanting other types in the household field.

After we developed this machine and had filed some patent applications on it we sold the rights to Mr. A. A. Kull who I believe organized the Domestic Electric Refrigerator Corp. I do not recollect that I was an officer of that corporation but might have been on the board. At any rate it went along and made a few machines under the name "Domestic,"—just how many I do not recollect but certainly not over 500. Then this company in some way sold out to Julius Holmes and the Domestic unit was revamped and became the Holmes unit. I think all told Domestic and Holmes put out 12,000 refrigerators, and I am informed that a good many of these are in successful operation today.

Now as to the Allison machine—for a while the Holmes company employed Fred Allison and thinking that his name would mean something in the field they called the machine "The Allison Unit." Allison had nothing to do either with the engineering or the production of the machine and after a rather brief connection with the company got out of the picture. If later he made an "Allison Machine" I know nothing about it.

The Holmes company blew up on account of poor manufacturing facilities, at least that is my opinion. They had their first machines made by contract and not in their own factory. Inspection was poor and field troubles overcame them. Julius Fleichman Holmes paid up all the debts and the company died a dignified death, which is more than a great many ventures in this field can say.

H. R. VAN DEVENTER.

Nippon Air Conditioning

Melchoir, Armstrong, Dessau Co., Inc.
300 Fourth Ave., New York City

Editor:

Please enter one year's subscription to ELECTRIC REFRIGERATION NEWS for Katsumi Kihara, Chief Engineer, G. K. Kenzaisha, 2-2 Tori Sanchome Nihonbashiku, Tokyo, Japan.

It may further interest you to know that Mr. Kihara has spent some time with us in New York. His company specializes in engineering and contracting for air conditioning. It was rather surprising to the writer to learn during his course of conversation with Mr. Kihara how far advanced they are in air conditioning in Japan.

The market in Japan is apparently promising, and we may add that we were successful in selling this company a complete 1-ton air-conditioning outfit for use in one of the private offices of the company. The equipment for air conditioning sold was a Trane cabinet room cooler to be used in conjunction with a Lipman Freon condensing unit.

ARCH BLACK, Engineering Dept.

News Handled Well

Hardy Mfg. Co., Inc.
100 Davis Ave., Dayton

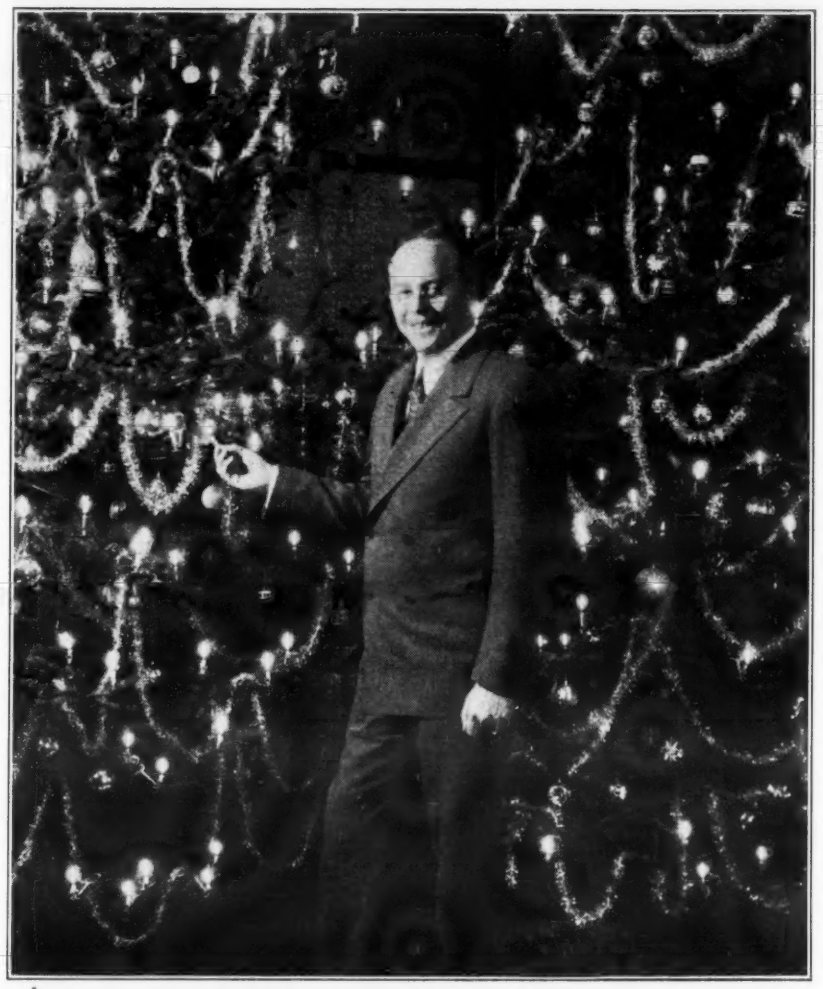
Editor:

As things turn up that will carry news values or interest I will surely send it on to you, for it is the excellently handled material of that nature that helps to make ELECTRIC REFRIGERATION NEWS the fine publication that it is.

HOMER H. HARDY, President.

"As an advertising man I like your publication—its smart, newsy style."—Russell Bacon, 37-20 81st St., Jackson Heights, New York City.

Norge Sales Light Xmas Trees



DETROIT—Norge salesmen from all parts of the country decorated Christmas trees in the offices of Howard E. Blood, president of the Norge Corp., in a novel pre-Christmas campaign in which one candle was added to the trees for every two sales made during November and December.

According to Norge officials, the campaign was the most effective winter promotion which Norge has ever employed. Mr. Blood was said to have been kept up most of Christmas eve receiving congratulatory messages in the form of long distance telephone calls and telegrams on the success of the sales drive.

The campaign resulted in enough sales not only to supply candles for one big tree in Mr. Blood's office, but to cover a veritable forest of trees which could hardly be contained in all of the Norge general offices.

LETTERS

Patent Suit Settled

Mr. W. D. Keefe, Sales Mgr.
Fedders Mfg. Co.
57 Tonawanda St., Buffalo.

In the United States Patent Gazette of Dec. 25, 1934, we see a note to the effect that the Frigidaire-Fedders patent suit on evaporators has been settled. Can you send us a copy of the court decision, or any other details for use in preparing a news story?

ELECTRIC REFRIGERATION NEWS.

Answer:

Fedders Mfg. Co.
Buffalo, N. Y.

Editor:

In reply to your letter of Jan. 3 for the attention of Mr. Keefe on the subject of the settlement of the Frigidaire-Fedders patent suit, about all that we can say is that it was settled by mutual consent and out of court. Apparently there is not a news story in it.

L. F. FEDDERS,
President and General Manager.

Slow Mail Service

132 Grand View Ave.
Worcester, Mass.
Dec. 15, 1934.

Publisher:

A few minutes ago, 2:35 p. m., the Dec. 12 issue of the NEWS was delivered by special messenger for which service I was charged 10 cents.

Last Saturday, Dec. 8, the Dec. 5 issue was similarly delivered but no charge was made to me.

In regard to your letter dated Nov. 16, 1934, to the Detroit Postmaster, who is responsible for this situation, your company or the Post Office?

I appreciate having the paper over the week-ends but not so much so that I can afford to pay a 10-cent a week charge. It would be a larger job than I'd care to tackle to adjust the ponderous machinery that is the Post Office Dept. to suit my own convenience. It does seem, though, that having had several instances of Saturday delivery on the schedules of second-class mail matter that it might be done regularly.

Three and a half days and three nights does seem ample time for carrying mail from Detroit to Worcester. Two days and nights seems plenty to me; enough, I'm certain, for first-class matters delivery.

I would greatly appreciate a time schedule of your mailing department's standard routine. Do the copies go out as fast as labelled or all at one time?

If it will help matters if you find the delay due to circumstances beyond your control, I would be willing to pay part of the cost of having my copies sent by first-class mail, unless the Post Office can be jogged into giving regular, early second-class delivery.

I'm sorry to trouble you about this but after all I do want the NEWS as early as possible while it is news.

THOMAS W. CARTER, JR.

News Is Not Pre-Dated

Business News Publishing Co.
5229 Cass Ave., Detroit, Mich.
Dec. 18, 1934.

Mr. Thomas W. Carter, Jr.

Replying to your letter of Dec. 15, I do not understand how you obtained special delivery of ELECTRIC REFRIGERATION NEWS unless you instructed the Post Office to make this delivery at your expense. If you had instructed us to make special delivery, it would have been necessary to attach the necessary postage and in that case there would be no reason for the C.O.D. charge.

I agree with you 100 per cent that the delivery is too slow. The Detroit Postmaster has not answered recent complaints which we have made regarding the service.

For some time, we have been mailing the paper on Wednesday afternoon. Several deliveries are made to the Post Office. I have checked up on several occasions late Wednesday evenings and found that all papers had gone into the mail with the exception of foreign and Canadian which require special handling and bundling.

We have an experienced crew in the mailing room which has been giving very rapid service. They usually get the first lot of papers from the printer shortly before noon Wednesday. We pay the girls on a piece work basis. Each girl wraps, labels, bundles, and places in the mail bag a certain number of papers. Since we have used the piece work basis, we have been getting speed on that operation never before accomplished.

It is well to keep in mind, however, that ELECTRIC REFRIGERATION NEWS is not pre-dated. It goes to press Tuesday and goes in the mail on Wednesday, the date of issue. Most publications date their papers ahead so that they will arrive on or before the date of issue. That does not give you any faster news service. In fact, the news value is probably less since the publication schedule probably allows a longer period between the actual closing date and the published date of issue in order to provide for the necessary mechanical operations.

I believe we are getting about the maximum service so far as printing, binding, and mailing operations are concerned. I feel sure that we are *not* getting the best possible service at the Post Office but frankly, we do not know what to do about it. Our standing at the Post Office is good. We keep up our deposit account and the head of the second-class mail department has always been most courteous and accommodating to us.

I'll see if we can work out this experiment: I will ask the head of our mailing department to spot your paper, if possible, in process and mark the date of its delivery to the Post Office on the wrapper. Will you then please mark the date of delivery and return the wrapper to us? I am not sure that we can accomplish this every time without incurring an undesirable delay. In other words, I do not want the mailing department to hold up the mailing of your paper just to make this notation, but we will try it anyway.

F. M. COCKRELL.

Four Days in Transit

132 Grandview Ave.
Worcester, Mass.
Jan. 2, 1935.

Publisher:

Thank you for your letter dated Dec. 18, 1934, from the text of which I am more than ever led to believe the irregular delivery of my E.R.N. is solely the fault of the Post Office Dept.

I am returning several E.R.N. wrappers, the two latest coming under our little arrangement, and the others, some I had previously noted. I am enclosing in this letter the envelope of a letter from a friend in Chicago, the postmark of which should tell a story. Twenty-seven hours, Chicago to my house!

It is my opinion that the second class mail bag in which my E.R.N. is carried is subjected to a number of delays such as transfers from mail car to mail car and long waits on platforms.

So far the special delivery service I am getting is concerned, I think it nothing more than special delivery on this end by request of the Detroit Postmaster with no effort being made to shorten the time spent in transit.

You know that all U. S. copies of E.R.N. are out of your mailing room at, let us say 6:30 p. m. I am referring now to a last summer's time table of the Michigan Central and Boston & Albany Railroads, using standard time which should make no difference on interstate train schedules. It might be possible for E.R.N. to be put on board the "Wolverine" leaving Detroit about 7 p. m. and arriving in Worcester at 10:30 a. m. the next day, an unlikely circumstance for second class mail. A more reasonable assumption is that the paper might be put aboard the "Exposition Flyer" (M. C. & B. & A. train No. 40) leaving Detroit about 4 a. m. (Thursday morning in our case) and arriving in Worcester about 8 p. m. (Thursday night, in plenty of time to be made up in the mailman's Friday morning bundle). Since the latter possibility has not occurred in the past it seems hardly likely to happen in the future.

All the above does seem to indicate long delays enroute, in which case I agree with you there isn't much we can do about it although we might each raise a loud howl to our respective postmasters. The more I think of it the more unreasonable it seems to delay mail matter so long.

I am aware that the Post Office Dept., when the occasion demands, send a tracer slip of some sort attached to the piece of matter in question, on which all clerks handling such piece sign their names, together with place or office and date and time. I don't know, though, whether the P. O. Dept. will release such a slip to the party demanding such service. Do you know anything about this?

We may get to the bottom of this delay matter yet.

Sorry I have no typewriter so I couldn't type this and thank you for letting me take up some more of your time.

THOS. W. CARTER, JR.

Note: The Dec. 19 issue of ELECTRIC REFRIGERATION NEWS, mailed about 3:30 p. m. Dec. 19 was delivered to Mr. Carter at 5:15 p. m. Dec. 22. (Three days in transit.)

The Dec. 26 issue was mailed about 3:30 p. m. Dec. 26 and was delivered to Mr. Carter at 4 p. m. Dec. 31. (Four days in transit.)

Three Days to Chicago

Refrigeration Research Institute
6122 S. Mozart St., Chicago

Heretofore we have been receiving ELECTRIC REFRIGERATION NEWS on Saturday and inasmuch as some of our men state they have seen them as early in the week as Thursday, we are wondering if it is possible for you to get them off to us so that we can receive them in Chicago on Thursday.

Anything you can do towards getting shipment of these papers off to us earlier in the week will be very much appreciated.

J. A. NASMAN,
Librarian.

Thanks for the Order

Seeger Refrigerator Company
Saint Paul, Minn.
Jan. 2, 1935.

In reply to yours of Dec. 20, it won't be necessary for you to send anyone up to us in reference to advertising in the DIRECTORY AND MARKET DATA BOOK as I have already instructed Mr. Greve who handles our advertising to place an order with you.

This does not mean that we would not like to see you or some one of your representatives, but I realize we are off the beaten path, and we will try to get together the next time I am in Detroit.

WALTER G. SEEGER,
Vice President.

Throughout years of reliable service—on refrigerators, washing machines, ironers, oil burners and air conditioners—Delco motors have established an enviable reputation for quiet operation and dependability. Household appliance manufacturers and dealers have recognized the value of Delco's Sealed Lubrication, Vulcanized Rubber Cradle Mounting and End-Play Take-Up. They know that these Delco features contribute in a large measure toward the satisfaction of the retail buyer. And this satisfaction is an important consideration in the manufacturer's choice of an electric motor.

DELCO PRODUCTS CORPORATION, DAYTON, OHIO

DELCO MOTORS

COMMERCIAL REFRIGERATION

Champion Builds New Counter Freezer

ARLINGTON, N. J. — Champion Line Machinery, Inc., has produced a new direct expansion freezer as the latest development in its "Champ Freeze" line of counter-type ice cream freezers.

The construction of the "Streamline Champ Freeze," as it is called, comprises freezing cylinders made of heavy polished stainless steel and a dasher which scrapes the sides of the cylinder with exceptional thoroughness and at the same time whips the ice cream to a smooth texture and fine quality.

This new device, built in streamline design, is mounted on a 40-gal. hardening cabinet and is equipped with an easily accessible 20-qt. mix storage compartment.

This new cabinet accommodates packaged goods just as easily as bulk ice cream.

Emptying the freezer takes a half minute for either package or bulk containers.

Packaging Laboratory Set Up in San Francisco

SAN FRANCISCO—To enable customers to visualize how their packaged goods compete for attention with competitive brands, a Pacific Coast boxboard manufacturer recently opened up a "packaging laboratory" in a San Francisco skyscraper. Nothing is to be sold from this grocery store.

The new unit is a modern grocery store planned in accordance with specifications of the store-planning department of a large chain-store organization. Along one wall is a Frigidaire-cooled refrigerator filled with perishables. On the counter is a scale and cash register.

The store is fully stocked with all types of merchandise found in a grocery store.

Standard Exhibits Model Store at Food Fair

PHILADELPHIA—Standard Refrigerator Co. of this city sponsored a complete modern store at the annual Philadelphia Food Fair here.

Refrigeration equipment included a storage refrigerator, size 8 ft. x 6 ft. x 8 ft. 6 in., arranged for forced convection cooling, a 10-ft. air-conditioned display case including block enclosures and scale stands; and an air-conditioned delicatessen case.

The complete job was refrigerated by a Brunner air-cooled compressor, installed by Standard Refrigerator Co.

2 1-2 Gal. Counter-Type Freezer Added to Russ Line

CLEVELAND—Russ Soda Fountain Co. has added a new unit, the model 240-SC, to its line of counter-type ice cream freezers.

The model is equipped with a 2½-gallon horizontal freezer, and the hardening cabinet has a capacity of 40 gallons of bulk and 60 to 70 gallons of package ice cream. The refrigeration compressor is housed outside the unit.

Features include an all-steel electrically welded frame, polished stainless steel freezer housing, black luster cabinet, heavy porcelain enamel working top, and moulded hard rubber covers.

G-E to Cool Wine & Air in New Club

CHICAGO—Complete General Electric refrigeration and air-conditioning equipment has been selected for the new $50,000 Club Moselle, wine tavern, which will be opened here soon. The club will be owned and managed by Jean Pierre, native of Luxemburg and connoisseur of fine wines, according to Sam Nides, sales promotion manager of R. Cooper Jr., Inc., Chicago, G-E distributor.

Installation includes complete G-E equipment for bars, storage cabinets, and coolers; G-E air conditioning and oil burner; G-E sound equipment and Russ equipment for all bars. Total cost of the installation will approximate $15,000. Commercial division of the Cooper organization made the sale, which was closed by A. Niehaus.

"The fine art of wine drinking may be mastered at Club Moselle," said Nides, "for Pierre will serve patrons only those wines which are agreeable to their particular systems and will caution them against mixing drinks.

"Waiters and waitresses are being selected for their knowledge of wines and liquors and they must go through a special training period under Pierre."

Horr Joins Staff of Binks Mfg. Co.

CHICAGO—Leonard W. Horr, former Chicago manager of the Henry Vogt Machine Co., Louisville, Ky., has become associated with the cooling equipment division of the Binks Mfg. Co. of this city, manufacturers of water cooling equipment and industrial spray appliances.

2 New Units Replace Outmoded System & Lower Dairy's Costs

WYANDOTTE, Mich. — A typical example of profitable modernization of refrigeration equipment for a dairy is outlined in the installation of Frigidaire commercial refrigeration equipment made recently in the Johnson Creamery of this city.

Johnson Creamery is not a huge plant when compared to some others operating within the trading area of Detroit. In terms of refrigeration rating, Johnson Creamery's plant for several years past had been served by a 25-hp. compressor of rather obsolete design, used to provide the refrigeration for the cooling aerator and the storage rooms. Since the system was designed for using brine as an intermediary agent, an additional 2-hp. motor was required for operating the circulating pump.

Peak Load When Aerating

The peak refrigeration load occurred during the time the aerator was in operation, since the instantaneous cooling of milk from the pasteurization temperatures of above 140° F. down to proper storage temperatures of approximately 40° F., required the major portion of the plant capacity. Cooling the milk originally, however, was a relatively short process, which meant that for the remainder of the time a machine was being used whose horsepower was considerably in excess of reasonable requirements.

It could, of course, be argued that the machine, designed for brine circulation, need operate only a sufficient number of hours to furnish the refrigeration required for the complete day. Theoretically this is true. In fact, at the time this installation was made years ago, this was considered a real point.

Economies of New System

However, before the mirror of today's modern improvements several factors were revealed, which indicated that the older system could easily be discarded—at a profit. With data available covering modern equipment and methods, some interesting comparisons were made.

In the first place, the system was not automatic in operation which meant not only some inconvenience to those in charge of operations but numerous instances of unnecessary overtime operations due to the human element involved.

There are many technical intricacies attached to the distribution of electric power which are not easily understood by the layman, among which is the so-called "demand" rate applied in cases of heavier power equipment. Reduced to its simplest terms, this rate means that many electric power companies make a charge based upon the heaviest single power demand they may be called upon to supply and for which they must continuously maintain adequate facilities.

Cooling by Direct Expansion

Thus, it can be seen that the "demand" charge for a 25-hp. motor is necessarily higher than that which would be required for a smaller motor, provided, of course, such smaller motor would prove adequate.

Few engineers today would deny that to use a refrigerant to cool brine which in turn was used to cool milk, would normally cost more than if the refrigerant could be used to cool the milk directly. Thus, if changes were to be made, here was another potential opportunity to reduce costs of operation and at the same time improve the operating characteristics.

These, with other points, represent the general line of reasoning pursued by the Frigidaire engineers whom the manager had called in for consultation on the subject of improving the entire refrigeration function in the plant. A complete analysis was made of all the operations carried on, which included a several day's study of the various activities occurring throughout each day. As a result, a complete new layout was presented, which, after it was proved point by point, was accepted by the company, and the work ordered undertaken.

Today the Johnson Creamery company is equipped with practically all new refrigeration apparatus. A new direct-expansion aerator has replaced the old circulating brine-type aerator. As implied in the designation "direct expansion," the refrigerant direct from the compressor is admitted to the coils, which make up the aerator itself.

The aerator is divided into three sections assembled in a vertical series of which the top one uses only cold water as a precooler for the warm milk coming from the pasteurizer, also equipped with a cold water jacket, which reduced milk temperatures to 125° F. before delivery to the aerator.

Leaving the pre-cooling section, the milk passes in turn to the center and lower sections containing refrigerant, from whence it is delivered to the bottling machine at 38° F. Each of these sections is connected to a separate 10-hp., 4-cylinder Frigidaire compressor, the refrigerant flow of which is automatically controlled according to the volume and temperature of the milk.

The use of two compressors offers all of the advantages to which reference has already been made. The demand rate for power is automatically reduced. In addition there is the factor of variable power requirements throughout the day and the year. In winter, when water is at its lowest temperature, milk can be cooled with the water section and one refrigerant section of the aerator using but one compressor.

The entire installation has been made so that under such conditions the second compressor is devoted only to keeping the storage room at proper temperature, operating only at intervals and expanding Freon directly into three Frigidaire forced-convection cooling units, which contributes further to operating economy.

During hot weather, with the refrigeration demand at the peak, a push of a button throws the combined capacity of both compressors onto the aerator for the duration of the aerating period.

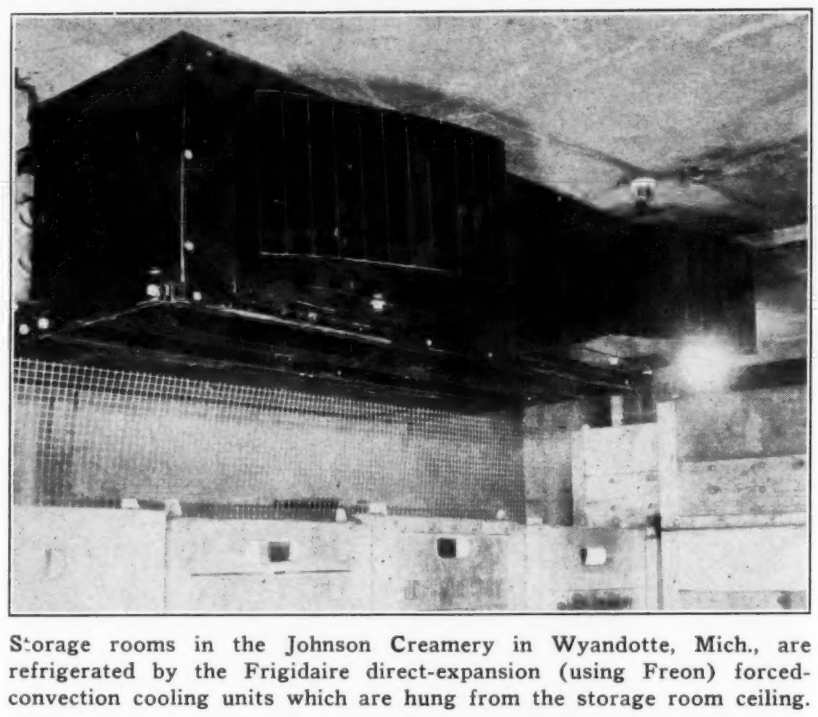
The saving in current costs for motor operation is not entirely a function of the outright difference in horsepower ratings between the old and the new. That, of course, is one factor, but in addition there accrue the advantages of the higher refrigerating efficiency per horsepower due to direct expansion of refrigerant in the aerator, the more precise control of running time due to automatic designing, and the complete elimination of the 2-hp. brine pump motor.

Previous to the change in equipment, temperatures in the storage room were satisfactory for the keeping of milk, but it was practically impossible to overcome conditions of excess dampness upon the walls and the stored cases.

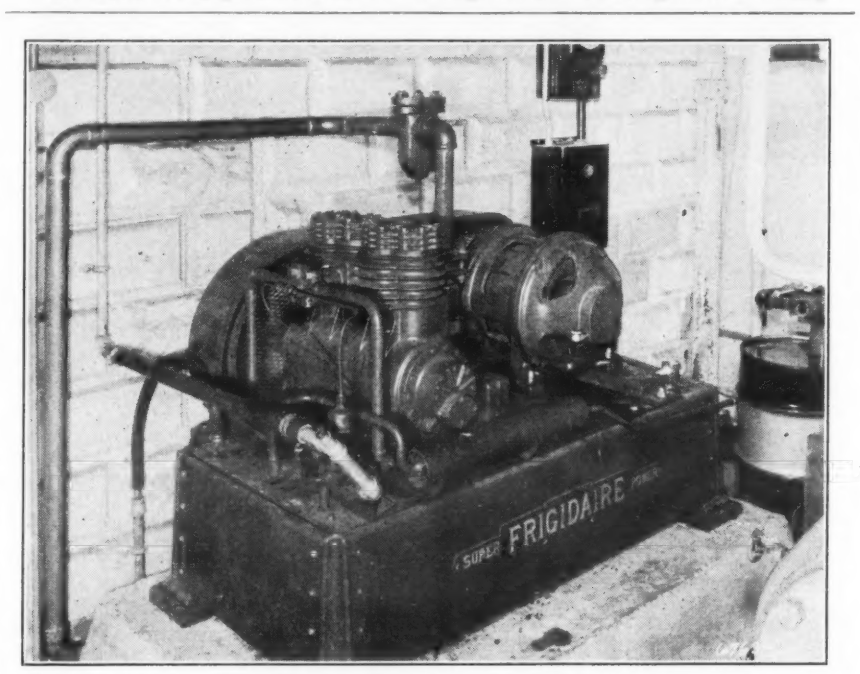
The new cooling units, used to replace the older brine coils, are equipped with electrically driven fans, stimulating circulation throughout the entire area served, drying up excess moisture and carrying it away through the condensate drain connections.

In addition to the economies represented by the direct dollar savings and by the conveniences to workmen, economy of space has been effected through this new installation. Much of the floor area originally required for the older compressor room has been allotted to extra storage space and space for additional non-refrigerating machinery secured in the modernization program. The elimination of the brine tank, occupying a space 12x5x3½ ft., from the cold storage room, has added just that much space for additional stock within the room itself.

Latest in Dairy Refrigeration



Storage rooms in the Johnson Creamery in Wyandotte, Mich., are refrigerated by the Frigidaire direct-expansion (using Freon) forced-convection cooling units which are hung from the storage room ceiling.



Two of these 10-hp. Freon compressors furnish refrigeration for the entire dairy. The compressors are so connected that both units, or one unit alone, can be connected to the aerator as required, with one of the two units supplying refrigeration for the storage rooms (see picture above) when it isn't connected with the aerator.

Of Interest To YOU:

Refrigerating & Power Specialties Co.,
380 Brannan Street, San Francisco
and
Van D. Clothier
1015 East 16th Street, Los Angeles

have been appointed Pacific Coast Distributors of—

EXTRA DRY ESOTOO VIRGINIA SMELTING (Liquid Sulphur Dioxide)

and

V-METH-L VIRGINIA SMELTING (Virginia Methyl Chloride)

By purchasing your refrigerants from these authorized distributors, you will be sure to receive the genuine EXTRA DRY ESOTOO and V-METH-L, and obtain the efficiency and satisfaction assured by their use.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

MAIL THIS COUPON Now

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, Mass.
Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time. ERN-1-9-35

☐ Folder: Extra Dry ESOTOO (Liquid Sulphur Dioxide)
☐ Folder: V-METH-L (Virginia Methyl Chloride)
☐ Folder: Transferring from large to small cylinders
☐ Circular: Physical properties of various refrigerants

Name .....
Street & No. .....
City & State .....

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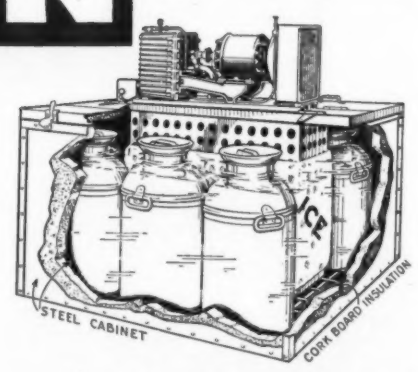
HAVEN

MILK COOLER:

1. Patented liquid measuring device is trouble-proof —no adjustment needed—can not be overloaded!
2. No needle valves, compressor valves, belts, crankshafts, connecting rods, piston rings, cylinder side-thrust, delicate mechanisms—NONE!
3. Double-acting compressor actually *improves* with use! NO compression loss.
4. Simplest, sturdiest compressing unit of *any* electric refrigeration system! DIRECT DRIVE!
5. *Customer satisfaction assured* with Haven's simple design, rugged construction, no delicate complicated parts, *new basic compression method!*
6. *Pays YOU a BETTER PROFIT because a Haven eliminates usual causes of servicing.*

WRITE today for information on territory, prices—and how *you* can cash in on Haven dealership, handling America's *fastest selling milk cooler* and commercial line of high sides from ¼ to 1½ H.P. *HURRY.*

The Haven Oscillating and Reciprocating Compressor is one of many EXCLUSIVE features of the Haven Milk Cooling Unit, furnished *ready* to use.



THE HAVEN COMPANY
530 West Lapham Street, Milwaukee, Wisconsin.

COMMERCIAL REFRIGERATION

Water Cooler Built For Gas Stations

DETROIT—Since service is the dominating factor in bringing customers into gasoline stations, oil companies are recognizing water cooling as an important part of their service, according to S. V. Alltmont, manager of the liquid cooling division of Kelvinator.

Installation of this type was recently made in the new Shell super service station located at the junction of Lindell Blvd., Vandeventer, and McPherson Aves., St. Louis.

The refrigeration equipment in this station is a Kelvinator horizontal-type water cooler enclosed in a bonderized steel cabinet about 34x19x20 in. in size. The cooling unit has sleeve-type direct cooling and is equipped with a pre-cooler which consists of two special coils, one within the other. Waste water flows within the inner coil and incoming water in the outer coil; waste water is thus used to cool incoming water.

The condensing unit is spring mounted on rubber cushions, has an adjustable temperature control, and is powered by a ¼-hp. motor. A high side float valve controls the refrigerant.

Engineers of such oil companies as Standard Oil of California and Atlantic Refining Co. furnished the idea for this type of cooler. Due to its size and shape it may be put under a table or in a back room. It is sold without drinking water equipment if desired.

Pittsburgh Supply Firm Enters Refrigeration

PITTSBURGH—Williams & Co., Inc., of this city, supplier of welding equipment, metals, and tubing for mechanical apparatus, recently established a refrigeration division. Refrigeration supplies will be maintained at three warehouses in Cleveland, Cincinnati, and Pittsburgh.

Refrigeration equipment to be handled includes belts, commercial cooling units, controls, dehydrators, expansion valves, filters, fittings, gaskets, gauges, ice cream cabinet parts, refrigerants, oils, thermometers, service tools, aluminum tubing, and solenoid, water-regulating, and two-temperature valves.

Frick Co. Issues 2 New Product Bulletins

WAYNESBORO, Pa.—Frick Co. has announced two new bulletins, one devoted to Frick refrigerating machine oil and the other to Frick milk cooling cabinets and cooling units.

The milk cooling cabinet and the refrigerating unit bulletin tells of the leading features of the cabinets, with a table of specifications.

'Pyramid Bar' Latest Russ & G-E Unit

CLEVELAND—The Pyramid Bar, a new Russ service bar with General Electric refrigeration, has recently been introduced.

Finned coils provide refrigeration for the keg storage compartments. The equipment includes an instant cooler, Russ balanced pressure system, and all necessary tapping apparatus. Storage compartments accommodate two half barrels and four cases of bottled goods and have insulated refrigerator doors. The service front is deep enough to accommodate tall glasses and pitchers.

The bar has an all-steel body, enamel finish, with alcohol-proofed mahogany top. Hardware is chromium-plated, drainers and faucet front are stainless steel. Over-all length of bar is 72 in. It is 26 in. wide and 41 in. high.

200 Attend C. V. Hill Co. Annual Convention

TRENTON, N. J.—Two hundred salesmen attended the recent two-day annual sales convention here of C. V. Hill & Co., Inc., manufacturer of commercial refrigerators.

A new sales manual, which gives a course in salesmanship applied to Hill products, and is designed to shorten the learning period of a new man, was given to the salesmen.

Inspection was made of the factory, new production machines installed since last year and the new research laboratory under the direction of Chester Ames, formerly of Frigidaire Corp.

Forced-Convection System Cools Long Haul Truck

WICHITA, Kan. — Burch Produce Supply of this city is using a refrigerated semi-trailer to haul butter, eggs, and dressed chickens between Wichita and Chicago, Cincinnati, St. Louis, Oklahoma City, and Dallas.

Refrigeration is supplied by a brine tank with a fan to circulate air through the load. Insulation consists of 4 inches of Dry-Zero in the roof, 3 inches in the sides, and 2 inches of cork in the floor. The trailer has a load capacity of 10 tons and an inside length of 22 feet.

4 Kold-Hold Units Used In Birdseye Truck

NEWARK—A refrigerated truck body, built by Peter Wendel & Sons, Inc., of this city, for Birdseye Frosted Foods Sales Corp. is refrigerated by four Kold-Hold cooling units and a 1½-hp. Universal condensing unit.

How To Service Orphan Refrigerators

For the information of service men, detailed authentic instructions for servicing various makes of "orphan refrigerators—published in recent issues of Electric Refrigeration News—are now available. Eleven popular makes are covered in this series. A limited number of extra copies of all 21 back issues containing these articles are available. A package made up of the 21 copies of the News (as listed below) will be mailed postpaid on receipt of $2.00.

Absopure Commercial

Drawings and service data on both Series E and F Absopure compressors, also of the Absopure float, header assembly, oil gauge, discharge and intake valves, and expansion valve. (July 18, 25, & Aug. 1, 1934.)

Allison Household

Detailed service instructions, with views of the two-stage compressor, float valve, flooded evaporator, check valve, etc. of this early household machine using ethyl chloride. Analysis of service calls. (May 30 & June 6, 1934.)

Belding-Hall Electrlce

Operating cycle of the high-side float system using sulphur dioxide and the unique Electrlce gear pump compressor. Drawings of service manifold, cast-iron cooling unit, thermostat, and electrical wiring. (Aug. 22 & 29, 1934.)

Holmes Household

Complete description of the ethyl chloride system built by Holmes Products, Inc. Illustrations of the compressor, float valve, charging valve in three positions, check valve, circuit breaker, and cooling unit, and service helps. (Oct. 10, 17 & 24, 1934.)

Iceberg Household

Service helps on Iceberg self-contained household refrigerators and water coolers, both of which used a reciprocating compressor and methyl chloride. (Aug. 8, 1934.)

Majestic Standard

Operating cycle, section of compressor, suction and discharge valves, float valve assembly, control assemblies, thermostat, and method of installing evaporator illustrated in a series of three lengthy articles on Grigsby-Grunow's conventional "open" type refrigerator. (Sept. 12, 19 & 26, 1934.)

Majestic Hermetic

Detailed description of all the principal parts of Grigsby-Grunow's hermetically sealed units, and instructions for all service operations which may be conducted in the field (Aug. 16, 1933.)

Rice Household

Data on the Rice household machines in which methyl chloride was the refrigerant. Discussion of common service troubles encountered with the capillary tube. (July 4, 1934.)

U.S. Hermetic

Service discussion of the direct-driven, sulphur dioxide hermetic machine built by the U. S. Radio & Television Corp. Phantom view of the refrigerating unit and electrical wiring diagram. (Aug. 15, 1934.)

Wayne Household

Description of all major parts in the Wayne household machine, and instructions for performing all common service operations. Illustrations of the complete system, double-seated valve assembly, section of the compressor, and expansion valve. (July 11, 1934.)

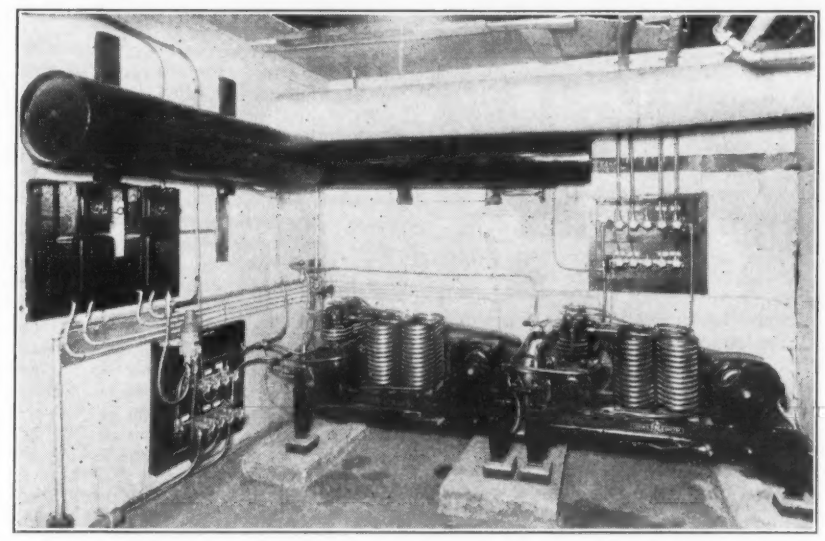
Welsbach Household

Complete treatise on the Welsbach ethyl chloride household machine, with illustrations of compressor, expansion valve, receiver valve, condenser shut-off valve, compressor inlet valve, thermostat, and two types of Welsbach controls. (June 13, 20 & 27, 1934.)

Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

Refrigeration for 'World's Longest Bar'

A General Electric "conditioned-air" cooling unit furnishes refrigeration for kegs which supply beer to Russ dispensers in "world's longest bar."



Two of the three General Electric condensing units shown in the machine room of the Savoy Grill in Akron, which claims that its bar, fitted with G-E-Russ dispensing units, is the longest in the world.

* * *

'Longest Bar in World' Equipped by Russ

AKRON, Ohio—Savoy Grill here, which claims to have the longest bar in the United States, has been equipped with a Russ beer-dispensing system, cooled with General Electric refrigeration.

General Electric equipment installed includes two CM-8W condensing units, one CM-6W condensing unit, two "conditioned air" chilling units.

With the Russ instant cooling equipment there are three 30-gal. surge tanks, three air compressors, and a number of coil and bottle boxes.

Baker Equips Storage Room for Kraft

OKLAHOMA CITY—Kraft Associated Distributors, Inc., here recently completed construction of an 18x30-ft. refrigerated storage room. Refrigeration equipment was installed by the Baker Ice Machine Co.

Insulation was provided by Armstrong Cork & Insulation Co. Two layers, each 2 in. thick, were installed on the walls, the first layer in cement, the second in asphalt. A false wooden ceiling is insulated with 5 in. of corkboard and the floor with 3 in. of the same material.

Kold-Hold Cools Trucks On Long Trips

HARRISBURG, Pa.—To transport ice cream to branches, some of which are 132 miles distant from the main plant, a 2,000-gal. Kold-Hold refrigerated truck is used by the Hershey Creamery Co. of this city. On occasions a truck has made two trips in one day to two different plants (approximately 36 miles, and 54 miles distant) without recharging the Kold-Hold units.

Kason Hardware Corp. Has New Quarters

BROOKLYN — Kason Hardware Corp., manufacturer of hardware for refrigerators and store fixtures, recently moved to 127-137 Wallabout St., Brooklyn. Previous address was 61-67 Navy St. here.

Borden's Plans to Equip Trucks with Kold Hold

LOS ANGELES—With two Kold-Hold equipped trucks now in operation Borden's Farm Products Co. of this city has announced the intention of changing the balance of its equipment over to Kold-Hold this year.

New Line of Cooling Towers Introduced

CHICAGO—The Binks Mfg. Co. of this city, manufacturer of water-cooling equipment, recently introduced a new line of indoor forced draft cooling towers.

The eight sizes of indoor towers range in capacity from 5 to 50 gallons per minute circulation. The tower housing is constructed of heavy gauge galvanized copper bearing steel material, provided with interior air deflectors. The fan is made of aluminum alloy.

Warm water is delivered to the tower from the condenser to a system of nozzles, arranged to provide maximum water breakup and distribution under low pressure.

The two smallest sizes are self-contained units. The larger sizes are made in sections which may be assembled on the job. All sizes include fan and fan motor, and water circulating pump if desired. All models may be arranged for automatic operation.

Reno Establishments Equipped by G-E

RENO, Nev.—H. L. Stradley, commercial salesman with Electric Appliances, Inc., recently made installations of General Electric commercial refrigeration equipment in the Grand Buffet, one of the oldest establishments in this city, and the Riverside Hotel Buffet and Casino.

The interior of the Grand Buffet—including bar, back bar, and fixtures—was designed by Stradley and Ted Sheldron of the East Bay Refrigeration Co. In the center of the back bar, at the bottom, is a wine cooling compartment and on the other side a wine, liqueur, and cordial bottled goods display. In the front bar is a bottled beer cabinet and in the center is a Russ RB-53 beer-dispensing system.

The refrigeration equipment consists of a CM-5A G-E air-cooled condensing unit and EC-7 G-E conditioned-air chilling unit, a special coil in the wine-cooling compartment and a special coil in the beer-storage boxes.

The bar in the Riverside installation is equipped with an RB-53 Russ beer-dispensing system. The refrigeration equipment consists of a CM-6A G-E condensing unit, pre-cooling storage boxes in the basement, an EC-17 G-E conditioned-air chilling unit for the storage boxes, a finned coil and special coil in the back bar, a 20-gal. water tank for spring water, and a 30-gal. surge tank.

Baker's Shop Installs Job For Audubon, Ia. Market

AUDUBON, Iowa—Baker's Electric & Refrigeration Shop has installed a Starr D7MA condensing unit and Larkin coils in a Percival walk-in cooler and case in a local market.

METHYL CHLORIDE USED BY 55% OF MACHINE BUILDERS ON *One Hundredth Anniversary*

In a century-old development, Methyl Chloride has advanced from a new chemical, first discovered in 1835, to one of the leading refrigerants for automatic refrigeration systems. Now, in 1935, it is used by 44 out of 80 manufacturers of refrigeration systems. Specification data in various 1934 issues of "Electric Refrigeration News" show that of 32 makes of commercial machines, 26, or 81%, use Methyl Chloride—10 exclusively. Of 30 household machines, 9, or 30%, use Methyl Chloride—8 exclusively. Of 18 manufacturers of air-conditioning equipment, 9, or 50%, use Methyl Chloride—3 exclusively.

This wide usage of Methyl Chloride has grown from its unique chemical, thermodynamic and other physical properties. Its pressure-temperature relationship is almost ideal for present automatic systems. Other properties contribute toward trouble-free, efficient automatic operation.

If you are considering a refrigerant for use in the automatic line, we suggest that you review Methyl Chloride's unique refrigeration properties. Our literature on "ARTIC, The Refrigerant" gives full details.

Artic
REG. U. S. PAT. OFF.
(DU PONT METHYL CHLORIDE)

DU PONT
The R. & H. Chemicals Department
E. I. DU PONT DE NEMOURS & CO., INC.
Wilmington, Delaware
District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

Westinghouse Line Features Revolving Shelf, Streamlining

(Concluded from Page 1, Column 3)

melt and flow together in true "air-stream" fashion. It is as if the lacquer had filled up the brinks.

The hermetically sealed refrigerating machine which has been utilized in previous Westinghouse models is retained in the 1935 line and with the addition of an ingenious silencer provides exceptionally quiet operation. From a distance of 10 ft. or more, the refrigerator seems to be operating in total silence. A sensitive sound meter will be used in Westinghouse demonstrations this year to show graphically just how quiet the refrigerator is.

The new Westinghouse "D" line for 1935 consists of 18 models with capacities ranging from 2.1 to 20.1 cu. ft. of food storage space. The line is divided into three series, the "streamline deluxe," the "streamline," and the "master."

The revolving shelf, leading feature of the 1935 line, is shaped like a half moon, with the flat end facing the door.

Tall bottles may be kept in the corners of the lower shelf, it revolves at a slight pressure of the hand, yet is locked securely in place when it is placed in its normal position. It can not tip, and is constructed of flat-ribbon steel. Dishes placed on it are protected by a guard rail that prevents them from sliding. Mounted on a bracket which extends from the rear of the food compartment, the shelf pivots in the center on a bearing mechanism so it can be swung around in either direction.

Eject-o-cube Tray

Another special feature, the eject-o-cube tray eliminates the necessity of pouring water over the tray to loosen the cubes. It also prevents the waste in temperature and size of the cubes when the conventional method of securing cubes is followed. By simply moving two levers upward and outward the entire supply of cubes is available, or as many as desired may be removed.

An oversize sanalloy froster, protected by a chromium-plated door, supplants the doorless porcelain evaporator which has been used on previous models.

The finish of the door is made to harmonize with the design of the triple-storage food compartment. In addition to the oversize froster a specially constructed refrigerated shelf will freeze a supply of ice cubes in an unbelievably short time.

The triple-storage compartment, making its debut in the new Westinghouse "streamline deluxe" refrigerator, is designed to provide a definite, correctly cold place in the refrigerator for certain types of food.

Triple-Storage Compartment

The triple-storage compartment consists of three drawers that slide in and out, like the drawers of a filing cabinet. These drawers, consisting of a porcelain salad crisper, dairy basket, and refrigerated fruit bin, serve as containers for the food which naturally should be placed on the lower shelf.

A seven-point dial temperature control, with econ-omatic operating and defrosting positions, is placed high enough so that children will not be able to reach it, yet is easily accessible to the woman of average height.

"Anticipating a revival of general business conditions, we are planning the most comprehensive advertising and promotion program for 1935 that Westinghouse has ever attempted," A. E. Allen, vice president in charge of merchandising, told a group of 50 editors and special news representatives at the luncheon meeting at the Waldorf-Astoria.

"Improved general business conditions, increased popular acceptance of electricity as a servant, and a definite trend toward lower rate structures on the part of utilities have all been responsible for the re-birth of the merchandising industry," Allen continued.

"Every electric appliance in our line from irons to ranges, and from hair curlers to electric refrigerators, showed a gratifying increase in percentage of sales during the past year.

"In the past few years, the majority of the electrical manufacturers have been wondering, for instance, what has been wrong with the electric range business. I am very happy to tell you that there is nothing wrong with the sale of electric ranges any more.

"Our 1934 range sales were more than double those of 1933, and the increasing acceptance of electric cookery promises to equal the popularity of electric refrigerators, now one of the dominating factors in the appliance industry.

"Our quota is set for 40 per cent more refrigerator units in 1935 than 1934 and we have just spent more than quarter of a million dollars to increase the production facilities at our Mansfield plant to meet the anticipated demand."

More Convenience

This Leonard model, SL-435, is the smallest in Leonard's standard line but it doesn't concede much in the way of accessory equipment to its larger brothers.

* * *

New Features Added To Leonard '35 Line

(Concluded from Page 1, Column 1)

ing unit with door, sliding shelf, and arched machine compartment door for easy under-cabinet cleaning.

The three single-door PD models have new modernistic hardware, double-depth covered ice cube tray, convenience basket, folding shelves, centered all-porcelain cooling unit, and automatic light with translucent-guard.

Model LD553 has a lacquer exterior with most of the deluxe features. Improved leg and base construction and redesigned machine compartment door produce a beautiful panel effect.

Models SP525, SL525, SP600, SL600, and SL721 (P designating porcelain and L, lacquer) have the following standard equipment: chillometer, glass defrosting tray, automatic light, table top, arched machine compartment door, covered and centered all-porcelain cooling unit, bar-type shelves, special black door-trim, and ice tray lifter.

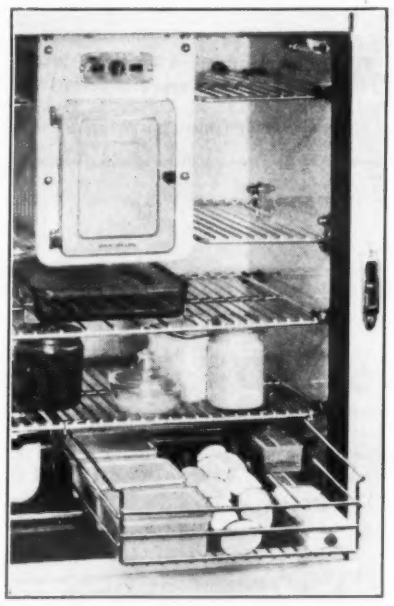
All of these features except the tray lifter are also included in the smallest SL model, the lacquer-finished SL435.

On these "SP" and "SL" models the convenience basket is available as an accessory at a slight extra cost. This accessory has two glass dishes in its use in these models.

Leonard's "price leader" model is the 4.25-cu. ft. "LA" model. This is equipped with a center-hung, all-porcelain cooling unit, a chillometer, and one-piece porcelain food compartment.

Private shows of the new models were made at Leonard's recent distributor conferences, two of which were held in Detroit and the third of which convened in San Francisco.

Eggs in a Basket



All kinds of small objects can be kept in the handy "convenience" basket which is a feature of some of the Leonard models.

2 Table Shelvadors Using Rotary Compressors Built by Crosley

(Concluded from Page 1, Column 5)

to $219.50 for the 7-cu. ft. deluxe Shelvador finished in porcelain.

5. The revival of the Crosley Icy-Ball absorption refrigerator (for use where electricity or gas are unavailable), freshly restyled, at a new low price of $59.95 complete.

6. The Centurion model radio, which is a 10-tube super-heterodyne set embracing reception of five wave bands, as compared with the three- and four-band reception of so-called "all-wave" sets.

This fifth band (150-300 kilocycles) is known as the "weather band," and gets Department of Commerce weather reports broadcast from airports.

Under good conditions, and especially along the eastern seaboard, certain foreign stations unobtainable otherwise may be received on this band.

Using an 8-in. speaker, the Centurion table model lists at $79.50; while the console, with a 12-in. speaker, lists at $100. Both employ the same cadmium-plated chassis.

These two models are Crosley's bid for the "luxury market," and are intended to prove that Crosley can build high-priced quality receivers as well as those which appeal to people of limited means.

But, just to show everybody who's boss around the low-priced field, Crosley has also brought out a 5-tube table set listing for $32.50 which will receive both American and foreign broadcasts. The same chassis is available in a console cabinet for $47.50.

A new battery set (table model listing at $69.50, console at $84.50) was also shown. This set has a synchronode chassis similar to that of the Crosley auto radio, but draws less than 2 amperes, rather than 6 or 7, as a result of using 2-volt tubes. Its six full-working tubes compare with a 7-tube AC-current chassis. It is a three-band (standard broadcast, police calls, short wave) set.

Other Models Changed Slightly

Practically unchanged from the 1934 models, the Shelvador and Tri-Shelvador refrigerator lines are being continued.

There is a stainless steel strip around the top of the box, instead of the rubber one used last year. There is a new and larger nameplate. Shelves now rest on built-in ribs instead of rubber supports, in all except the largest models. The Shelvador racks have been redesigned somewhat. Between the legs and the stainless porcelain bottom of the refrigerator there is now a waterproofed gasket.

Retailing for $129.50, the 5-cu. ft. Shelvador has two-tone hardware and an automatic interior light. The 6-cu. ft. Shelvador lists at $149.50, and the 7-cu. ft. box at $169.50.

A new removable and rustproof (two coats of enamel) vegetable bin is a feature of the 1935 Tri-Shelvador line. A fancier nameplate will be found on both the refrigerator door and the stainless steel door of the evaporator. Heavier hardware, two-tone, is used on all models.

The 4.3-cu. ft. Tri-Shelvador lists at $139.50, delivered and installed, the 5.5-cu. ft. box at $164.50, and the 7-cu. ft. model at $189.50.

All Shelvador and Tri-Shelvador models are available in porcelain.

Prices to Distributors

This year Crosley is quoting *carload-freight-paid* prices to distributors. Last year, according to Lewis Crosley, vice president and general manager, 95 per cent of all Crosley shipments were made in carload lots.

The 2-cu. ft. Table Shelvador model has 5.2 sq. ft. of shelf space (Nema rating), while the 3-cu. ft. model has 7 sq. ft. of shelf space, although its exterior dimensions (36-23⅝x25 in.) are the same as those of the 2-cu. ft. model. Both have two ice trays with a total capacity of 42 cubes.

Promotion of this refrigerator will feature its porcelain top, which makes it useful as a kitchen table.

The hermetically sealed rotary unit used in the Table Shelvador models runs about 80 per cent of the time in a 100° F. room, declare Crosley engineers. It has but three moving parts, and these are all within the housing. Entire refrigerating unit is of one piece, and is removable.

Neil Bauer, field sales manager, reintroduced the Crosley Icy-Ball refrigerator to the distributors.

"Back in 1929," he stated, "we did $600,000 worth of business on Icy-Ball refrigerators. Our Omaha distributor at that time alone accounted for $75,000 worth of sales on that item.

"With the advent of the Crosley electric refrigerator we thought we'd allow it to die a natural death. But, somehow, it just wouldn't die. Despite the absence of promotion, orders for the Icy-Ball continued to come in to the factory.

"So, figuring that we have something in this product, we intend to revive it. It will operate on two cents worth of kerosene daily. It should be invaluable in summer camps, crossroads general stores, roadside stands, farm homes, and remote places of all kinds—especially in those spots where ice is difficult to obtain."

Chief objection to the Icy-Ball is that one of the metal balls (they are filled with ammonia and water) must be "cooked" over a little kerosene stove for one hour out of each 24.

It will freeze eight small ice cubes in a tray which is contained in one of the balls. It may be used as a water cooler, milk cooler, or bottle cooler, as well as a refrigerator.

The new Icy-Ball is neater in design, has a galvanized interior (formerly painted), and is a lacquered steel box (the old one was wooden). Whereas formerly the Icy-Ball sold for $80 plus the stabilizer, it will list in 1935 at $59.95 complete (including refrigerator, stove, and stabilizer).

To Promote 'Coldrink'

Mr. Bauer also urged distributors to assign special men to sell the Crosley Coldrink (formerly the Coolrite) bottle cooler. Distributor's salesmen who contact dealers can sell Coldrink bottle coolers to roadside stands and stores en route, declared Mr. Bauer. He called on Distributor Wheliss Gambill of Nashville, Tenn., to cite his experiences as proof.

President Crosley announced that sales of bottle coolers directly from the factory to bottlers, which accounted for half of this business in 1934, will not be pressed in 1935. In case a bottler does place an order directly to the factory, the distributor in that territory will receive an override on all machines sold—*provided he has made an effort to get business on the Coldrink.*

H. E. Richardson, assistant to the president, emphasized the importance of getting Crosley refrigerators on dealers' floors *early* this year.

"Competition for dealers in 1935 will be the keenest the industry has ever experienced," he averred. "Unless you get dealers lined up at once, you are likely to find them loaded up with stock from a couple of other manufacturers by the time you get there."

Advertising Plans

G. H. Corbett, advertising and sales promotion manager, presented an enlarged and improved sales manual to the distributors, and announced that a complete line of mailing pieces and promotion helps were ready *now*, in advance of the selling season.

Crosley advertising in 1935 will feature quality and pride of ownership, he stated. Mr. Corbett also introduced Ralph Jones, head of the advertising agency of that name (which now has the Crosley radio account), and W. Wadsworth Woods, vice president of Visomatic, who showed the new Crosley slide film, "The Glorious Fourth."

Jack Rogers, assistant general manager of the corporation, pleaded for a year-'round business in both refrigeration and radio.

"Remember," he warned, "the name of this company is the Crosley Radio Corp. Do not let refrigeration run away with you, or crowd radio out of your minds!"

Lewis Crosley, vice president and general manager, told how the company had increased production from 14,000 in 1932 to 65,000 in 1933 to 132,480 in 1934.

Now, he declared, the factory has been retooled and equipped to handle a greatly increased production in 1935. A capacity production of 2,000 refrigerators a day is now possible. Expensive machine tools of the very latest types and design (Cincinnati, home of Crosley, is the center of the nation's machine tool industry) have been installed, and improvement in factory layout has been effected.

All Crosley compressors are produced in the Crosley plant, and last year 50,000 refrigerator cabinets were manufactured there, too. Mr. Crosley expects to double that cabinet production figure in 1935.

Mr. Richardson presented wall placques, for percentage of radio-refrigerator quota attained, dealers appointed, and dealer cooperation, to the following leading distributors in each territory:

H. A. McRae & Co., Inc., Troy, N. Y.; Southern Minnesota Supply Co., Mankato, Minn.; Milton-Brooks Co., Inc, Meridian, Miss.; Shield Co., Inc., Fort Worth, Tex.; Rogers & Baldwin Hdwe. Co., Springfield, Mo.; Western Supply Co., Salt Lake City, Utah; Crosley Distributing Corp., Chicago; Apollo Distributing Co., Newark; Interstate Hdwe. Co., Inc., Bristol, Tenn.; Saginaw Hdwe. Co., Saginaw, Mich.; Consolidated Automotive Co., Jacksonville, Fla.; W. E. Titus Radio Corp., Oklahoma City; Ott-Heiskell Co., Wheeling, W. Va.

In his address to the distributors, Powel Crosley, Jr., president, pointed to the fact that there was an improvement in various lines of industry in 1934 ranging from 5 to 40 per cent, a gain of about 16 per cent in retail sales, and an increase in the incomes of farmers variously estimated from 1 to 1½ billion dollars.

"Further evidences of recovery are the increases in purchases of machine tools and steel for agricultural machinery," he stated. "These factors should lead to further recovery and help the outlook for 1935.

Included among Crosley dealers this year, Mr. Crosley pointed out, are some of the nation's largest department stores, such as Marshall Field and Weiboldt's in Chicago, Hecht's Department Store and the Hub store in Washington, D. C., the Kresge Department Store in Newark, Ludwig Bauman in New York City and Newark, Stern & Co., Whitehills, Lit Brothers, and Schuman Brothers in Philadelphia.

Frigidaire Convention Series Opens Jan. 16

(Concluded from Page 1, Column 4)

accompanied by representatives of the household, commercial, and air-conditioning division.

Regional managers will travel with convention parties in their respective regions. These are: J. T. Collins, New York; L. F. Skutt, Great Lakes; J. S. Pfeil, New England; T. A. Farrell, east central; R. G. Hutchison, Pacific; E. D. Davis, Rocky Mountain; L. W. Curl, western; R. D. Van Dyke, southwestern; and H. T. Mattern, southeastern.

Either E. G. Biechler, president and general manager, or Mr. Newell will attend the New York, Boston, Philadelphia, Chicago, and Detroit conventions.

Cities at which the four crews will hold meetings and the members of the parties are:

Eastern: Frank R. Pierce, leader; Ellsworth Gilbert, general sales staff; R. B. Ambrose, retail commercial sales manager; A. D. Farrell, manager of exhibits and displays; C. J. Allen, general sales staff; J. B. Breen, air-conditioning division; H. W. Davy, sales department; Insco Williams, display department; and F. J. Mueller, traffic department. This group will open at Miami, Fla., and work north through Atlanta, Roanoke, Norfolk, Baltimore, Boston, New York City, Philadelphia, and Rochester, N. Y.

Central: H. J. Walker, Jr., leader; Frank C. Lyons, publicity department; George E. Durban, assistant manager, public utilities division; S. V. White, sales promotion manager, Kansas City branch; Joseph Thiele, southwestern regional staff; A. C. Freiman, east central regional staff; Joseph Nahstoll, display department; A. R. Jones, service department; and W. C. Yates, display department. This crew will hold meetings at Cincinnati, Chattanooga, Memphis, Indianapolis, St. Louis, Chicago, Detroit, Pittsburgh, and Cleveland.

Middlewestern: W. D. McElhinny, leader; Ralph Winegarner, Great Lakes regional staff; C. E. Quigley, east central regional staff; D. T. Hayward, east central regional staff; W. F. Switzer, market analysis staff; C. S. Trigg, sales planning division; P. F. Bunger, display department; M. D. Weisenbarger, commercial division; and R. E. Treon, field supply. This group will visit San Antonio, Houston, New Orleans, Dallas, Oklahoma City, Wichita, Omaha, Sioux City, Kansas City, and Des Moines.

Western: Lee A. Clark, leader; O. W. Wolf, air-conditioning division; Arthur Letherby, Detroit branch; A. J. Harrison, publicity department; F. W. Beecher, air-conditioning division; T. W. Markham, sales planning division; H. P. Norris, service department; James F. Pedder, sales planning division; and R. H. Huston, sales planning division. This group will open at Denver and will swing through Salt Lake City, Los Angeles, San Francisco, Portland, Seattle, Spokane, Billings, and St. Paul-Minneapolis.

Rehearsals and preparation for the 1935 conventions have been going on for several months under the direction of Ellsworth Gilbert.

Key Specifications of 1935 Leonard Models

Model No.	LA	SL435	SL525	SL600	SL721	SP525	SP600	LD553	PD588	PD704	PD896	PD1059
Overall Dimensions (in.)												
Height	47⅞	51⅜	52⅞	55¼	57⅛	52⅞	55¼	52⅞	55¼	57⅛	64⅛	64⅛
Width	24⅜	25⅛	28½	28½	31¾	28½	28½	28½	28½	31¾	32¾	40⅞
Depth	24⅛	24⅝	26	26	26	26	26	25⅝	25⅝	25⅝	26⅛	26⅛
Storage Capacity												
Gross food storage (cu. ft.)	4.25	4.25	5.25	6.00	7.21	5.25	6.00	5.53	5.88	7.04	8.96	10.59
Total shelf area (sq. ft.)	8.20	8.34	10.05	12.89	14.73	10.05	12.89	10.45	13.67	16.14	19.45	21.88
Ice Cube Trays												
No. of trays	2	2	3	4	4	3	4	3	3	4	4	4
No. of cubes	42	42	63	83	83	63	83	62	81	108	108	108
Weight of cubes (lbs.)	4½	4½	6¾	9	9	6¾	9	6¾	10½	14	14	20
Thickness of Insulation (in.)												
Sides	2	2	2½	2½	2½	2½	2½	2½	2½	2½	3	3
Bottom	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	3	3

AIR CONDITIONING

Harrington Traces Advancements In Air-Conditioning Design and Applications during 1934

By Elliott Harrington
Engineer, Air Conditioning Dept., General Electric Co.

1934 witnessed a general advance in the air-conditioning industry, and the development of certain definite trends. Broadly speaking, air-conditioning manufacturers enjoyed a very substantial increase in volume of business, due in large measure to the improved public knowledge of air-conditioning benefits to comfort and health, and to the rapidly growing public demand for these benefits.

Air conditioning for profit, wherein the purchaser obtains increased income, is still at the forefront of the air-conditioning picture, led by apparel shops, restaurants, and theaters. This was particularly true where many smaller establishments learned that air conditioning became necessary in order to maintain or increase patronage.

Drug and department stores began the adoption of air conditioning on a rather broad scale during 1934, and are following closely behind the establishments already mentioned.

Also, a substantial number of offices and apartments were air conditioned during the year. And 1934 saw a serious beginning of hotel air conditioning, as applied to guest rooms. Several notable installations of large capacity and a substantial number of smaller trial installations were made.

Air-Conditioned Homes

Prior to 1934, there were only a few completely air-conditioned homes in the country, these representing either model homes or homes wherein the owner had installed year-round air conditioning more or less as a hobby.

During the year, however, an appreciable number of homes were completely air conditioned for year-round service, simply because the owner had come to appreciate the benefits to comfort and health resulting therefrom. Also, a fair number of single rooms or suites in homes were conditioned, and therefore it may be truthfully said that the complete air conditioning of homes has begun.

Railway air conditioning expanded to the point where seasoned travelers are now demanding space in air-conditioned cars.

Central Systems

One of the marked trends developing during the year was a broader recognition of the central system method for air conditioning. Usually the lowest cost and most effective system is of the central type, where more than one room is conditioned and usually where even a single room is conditioned, provided it is possible to install the distribution ducts or piping.

These central systems take two forms, depending upon local conditions. The central system may completely condition the air at one location in the building, delivering the conditioned air through a duct system to the various points of use, or water may be used as a transfer medium between the central plant and various units located in the space to be conditioned. Notable installations of both types were made during the year.

Demand for Complete Systems

Another trend of importance was the increasing public demand for undivided responsibility for the apparatus. In other words, it is becoming generally recognized that parts which work together must be designed together, and that the manufacturer who designs and builds the complete air-conditioning apparatus is in a strong position.

There was still another marked trend toward year-round air conditioning. Until recently, summer conditioning, or simply cooling, has constituted the public's conception of the art. However, it is now becoming recognized that definite benefits to comfort and health accrue from winter conditioning, through the control of humidity, circulation, and cleanliness of the air.

In the fundamental art of air conditioning there was increased research activity. A number of additional hospitals and medical schools undertook further identification of the benefits of air conditioning to health and the therapeutic effects upon patients.

Considerable factual data were added to the working knowledge of the air-conditioning engineer, particularly in the form of improved summer conditioning standards. The great importance of even air distribution, elimination of drafts, and reduction of temperature gradient between floor and ceiling was fully recognized for the first time, and means developed to successfully handle these problems.

The matter of noise became more fully understood, and it is possible today to install a complete air-conditioning system to meet any reasonable noise level, provided the exact requirements are known in advance.

The year witnessed considerable refinement of detail in air-conditioning apparatus, improved manufacturing methods, and certain very desirable operating improvements.

New Floor-Type Conditioner

Typical of these is the year-round unit conditioner, Fig. 1, which controls the four elements of air conditioning the year-round. Basically, it consists of a refrigerating unit for cooling and dehumidifying, a heating unit taking steam from a central supply, a new type of humidifier offering substantial advantages, particularly when used with water having a high hardness content, filters and direct ventilation for controlling the cleanliness of the air, and a blower to provide the necessary air circulation.

A feature of this unit is the air delivery, wherein the warm winter conditioned air is delivered over the floor and allowed to rise naturally. The cool summer conditioned air is delivered over-head and allowed to fall naturally. Thus drafts are eliminated, a small temperature difference between floor and ceiling is produced, and improved comfort results.

Air Circulator

Another product development which caused considerable interest during 1934 was the air circulator, Fig. 2, a simple and relatively inexpensive device which is based on the premise that out-of-door air is cooler than indoor air during about half of each 24-hour day.

This air circulator is a portable device, usually mounted in the attic before an open window, with ordinary electrical connection to the nearest convenient outlet. It operates to bring in a large volume of outside air, through any windows which are open, whenever the outside air temperature is lower than the inside temperature.

It must operate very quietly and without vibration since its greatest utility is realized at night. Without any question, this relatively low-cost product gives more summer comfort per dollar invested than any other form of summer conditioning, although, obviously, its use is limited to the time between approximately 4 p. m. and 6 a. m.

During 1934 the importance of skilled application engineering in the field was even more broadly recognized. The finest air-conditioning products fail to perform when improperly applied, installed, or serviced.

Therefore it has become vitally important that air-conditioning dealers in the field maintain an adequate engineering staff, or experienced, effectively trained, and carefully supervised engineers.

As the year 1935 approaches, the prospective air-conditioning purchaser finds that he can buy, for a price well in line with the benefits received, summer, winter, or year-round installations, of either central or unit types, using one of at least three fuel mediums for heat generation, to control within relatively close limits any or all of the four elements of air conditioning. He finds that the apparatus can be guaranteed by reliable air-conditioning manufacturers, and handled in the field by a trained engineering, installation, and service force. And during 1935 he will see continuing refinement of detail and of application engineering procedure.

Public recognition of air conditioning will undoubtedly continue to grow. Railroads will increase the number of completely air-conditioned cars. The conditioning of hotel guest rooms will grow rapidly. The air conditioning of various other commercial establishments will continue the present healthy expansion.

Air Circulator

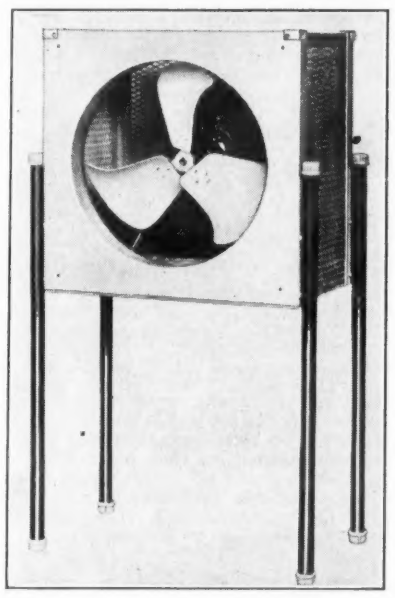


Fig. 2 — Another development during 1934 was the attic air circulator which is used to draw in cool night air.

Year-'Round Air Conditioner

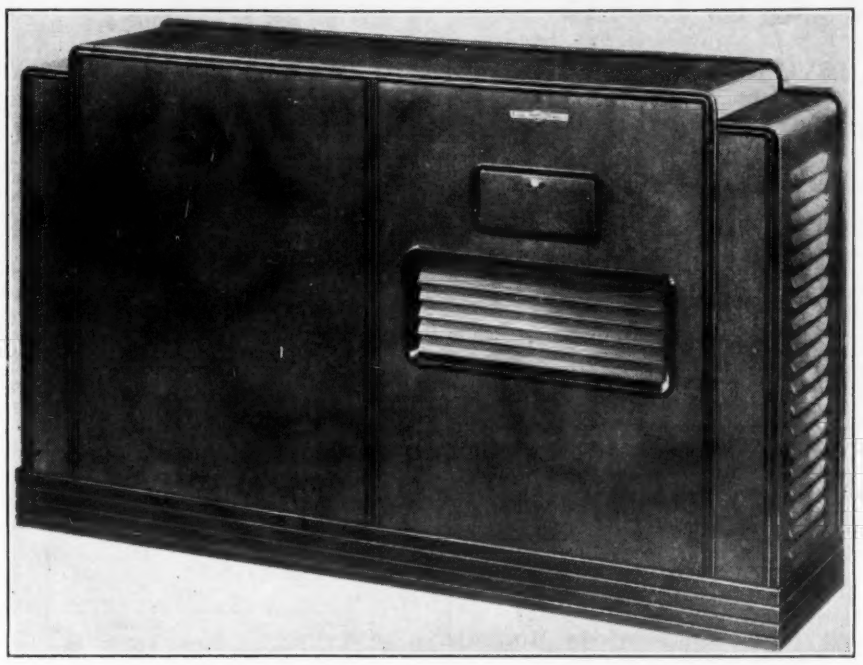


Fig. 1—This G-E unit room air conditioner, which was developed during 1934 and is described in Mr. Harrington's article, is used the year 'round.

American Radiator Builds Winter Conditioner

NEW YORK CITY — American Radiator Co. has announced a new conditioning unit which retails, non-installed, at $475, without the optional refrigeration coils.

Sale of the unit will not be pushed for six months until dealers have learned proper installation and service methods.

The unit consists of a rectangular box with a rigid steel frame mounted on legs to about the height of the boiler, with which it is connected. Air is drawn in at one end through Arco air filters, is passed through finned copper tempering coils which, heated by the boiler, remove any chill from the air. It then goes through a spray of water which is controlled by a Detroit Lubricator humidistat.

A Sirocco fan, driven by a ¼-hp. motor, discharges the air to the upper floor. Between the air filters and the tempering coils is space for the future installation of cooling coils.

Frigidaire Shows Increase In Railway Conditioning

DAYTON—1935 will see several thousand railway cars carrying Frigidaire air-conditioning systems in daily operation on virtually every major railroad in the country, E. G. Biechler, president and general manager of Frigidaire Corp., declared last week.

"Frigidaire's development of railroad air-conditioning equipment has arrived at the point where it is providing considerable employment," Mr. Biechler stated. "The assembly track and departments devoted to this class of manufacturing have been in steady operation on a three-shift basis, 24 hours a day."

Westinghouse Units Provide Cooling on McCormick Estate

CHICAGO — Kroeschell Engineering Co., Chicago distributor for Westinghouse air-conditioning products, has installed air-conditioning equipment to cool and dehumidify two rooms of Chauncey McCormick's country home "St. James Farm" near Naperville, Ill.

The air-conditioning apparatus, which consists of two floor-type units performing the functions of cooling, dehumidifying, cleaning and circulating only, conditions the living room and dining room of the residence.

Each of the air conditioning units has a refrigerating capacity of 12,000 B.t.u.'s per hour.

The Westinghouse RW-2 Freon refrigerating units with a capacity of 26,000 B.t.u.'s per hour is installed in the basement.

The system is so designed that additional rooms can be air conditioned when desired.

The conditioning units are provided with heating coils and allowance has been made for humidifying apparatus so that these functions can be added with a minimum of additional work.

Changes in Burner Code Would Affect Guarantees & Prices

WASHINGTON, D. C.—Public hearing on the proposed amendments to the Oil Burner Code will be conducted by the National Industrial Recovery Board, beginning at 10:00 a. m. tomorrow (Jan. 10), at the Raleigh hotel here.

Included in the proposed amendment to Article V—Cost Provisions—is the following:

"It shall be a violation of this code for any member to sell or exchange any product of the industry at a price below his individual cost."

Under Article IV—Labor Provisions—the following new clause is added:

"(f) Every employer shall make reasonable provision for the safety and health of his employees at a place and during the hours of their employment. Standards for safety and health shall be submitted by the Code Authority to the National Industrial Recovery Board for approval within six months after the effective date of this amendment. The standards approved shall be part of this code and enforceable as such."

Article VI—Industrial Regulations—will have a new Section 12 to read:

"12. The dealer agrees to guarantee to all of his customers who purchase oil burners from him, free service, day and night for at least three heating-service months, and not more than 12 months from date of installation; and free replacement of parts, due to defective material or workmanship, for a period of one year from date of installation, unless waiver of this provision be secured from the purchaser in writing at or before the time of sale. It is unfair competition for a dealer to advertise, offer for sale, or sell oil burning equipment on an order or contract that includes a guarantee beyond 12 months from the date of installation."

FHA Sales Boost Orders For Rudy Furnaces

DOWAGIAC, Mich.—Helped by the impetus of increased interest in home modernizing and building under the FHA and by introduction of a new line of house-heating furnaces, Rudy Furnace Co. announced its December orders ran 210 per cent ahead of December, 1933.

Dollar sales for the 12-month period ended Nov. 30 were 34 per cent ahead of the corresponding 1933 period. Unit shipments of winter air conditioners were 93 per cent and of furnaces 33 per cent ahead of 1933.

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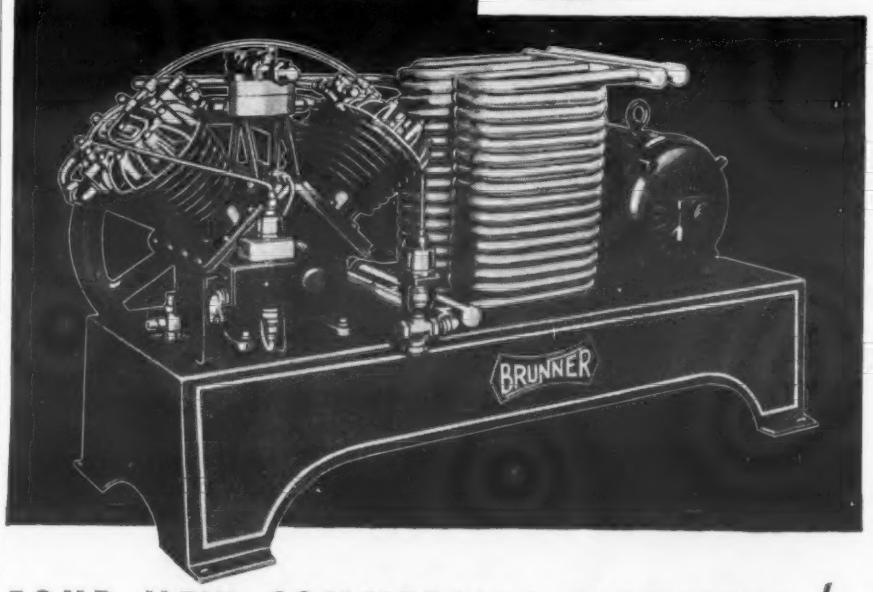

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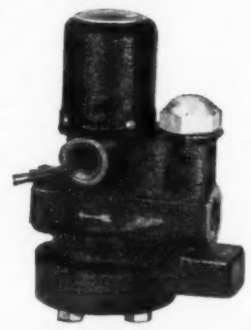

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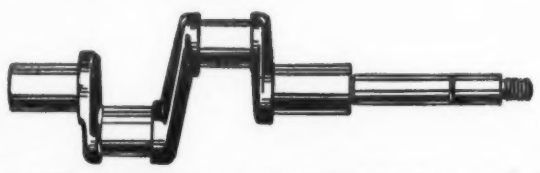

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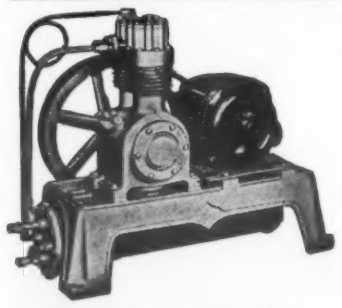

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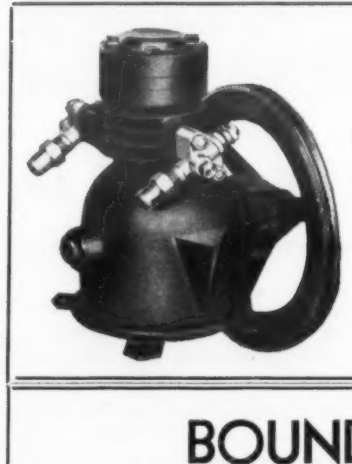

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Vol. 11—Jan. 3 to April 25, 1934. (Serial Nos. 250 to 266.)
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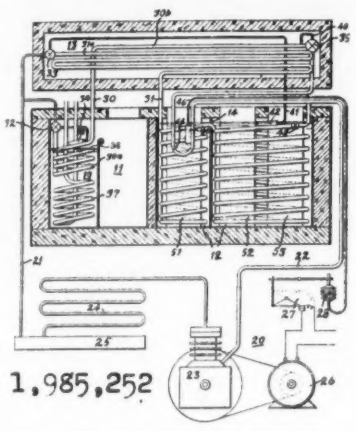
PATENTS

Issued Dec. 25, 1934

1,985,252. REFRIGERATING APPARATUS. Charles F. Henney, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. Application Aug. 30, 1930. Serial No. 478,913. Renewed March 17, 1934. 4 Claims. (Cl. 62—115.)

1. Refrigerating apparatus comprising, in combination, a plurality of evaporators connected in parallel circuit relation; a



1,985,252

common exhaust conduit for said evaporators; means for withdrawing gaseous refrigerant from the exhaust conduit, liquefying the refrigerant and returning the liquid to the evaporators; means for permitting and preventing the flow of refrigerant from one of the evaporators to the exhaust conduit; and means for preventing the flow of gaseous refrigerant from said evaporator to the other evaporators when said last named means permits the flow of refrigerant from said evaporator to the exhaust conduit.

1,985,286. REFRIGERATION APPARATUS. Gregg F. Forsthoefel, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., a corporation of Pennsylvania. Application Dec. 31, 1931. Serial No. 584,227. 13 Claims. (Cl. 20—35.)

1. In a refrigerator cabinet construction, inner and outer metallic walls separated by heat-insulating material and provided with margins having outer and inner seat portions, a non-hygroscopic and heat-insulating strip overlapping and seated against the outer seat portions, and spring means carried by the strip and cooperating with said inner seat portions to maintain the strip seated.

1,985,338. EVAPORATOR COOLING. William J. Caldwell, Independence, Mo., assignor to J. H. McCormick & Co., Williamsport, Pa., a corporation of Pennsylvania. Application July 11, 1930. Serial No. 467,238. 9 Claims. (Cl. 62—176.)

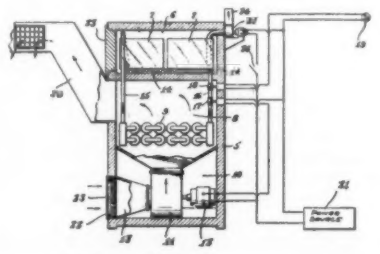
1. A process of cooling air comprising saturating the air with moisture, driving said air against moisture absorbing material in contact with metal whereby the material is wetted, evaporating moisture from said material thereby cooling said metal, and passing the air over said metal, thereby cooling said air.

1,985,381. ICE CREAM FREEZER. George Richards, Chicago, Ill. Application Sept. 14, 1932. Serial No. 633,133. 1 Claim. (Cl. 257—212.)

An ice cream freezer comprising an inner cylinder having an outwardly extending annular flange formed at its uppermost edge, an annular groove formed on the underside of said flange and arranged in spaced relation to the outer wall of said cylinder, an outer cylinder arranged in spaced relation to the said inner cylinder and having its upper edge received within the annular groove to form a gas tight joint therewith, the lower edge of said outer cylinder being formed with an inwardly extending flange for engaging the inner cylinder and to be soldered thereto to form a gas tight joint therewith, a spiral formed of wire material and having its convolutions spaced apart, the said spiral being arranged in the space between the said cylinders to form a spiral passage in the said space.

1,985,616. AIR CONDITIONING UTILIZING CARBON DIOXIDE ICE. Harry E. Morton, Boston, Mass., assignor to B. F. Sturtevant Co., Inc., Boston, Mass. Application July 5, 1934. Serial No. 733,843. 3 Claims. (Cl. 62—91.5.)

1. Air cooling apparatus comprising an insulated air cooling compartment, evaporator coils arranged as air cooling coils



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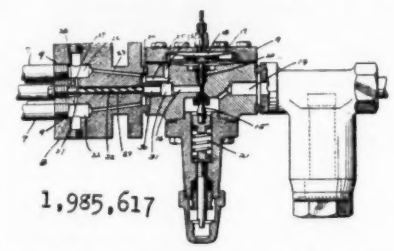
in said compartment in the path of the air to be cooled, a second insulated compartment for the reception of solidfied carbon dioxide, condenser coils in said second compartment exposed to the cooling effect produced therein, said evaporator and condenser coils being arranged in a closed refrigeration circuit containing a volatile refrigerant, means for moving the air to be cooled over said evaporator coils and discharging it into the space to be served, and means for removing the carbon dioxide formed in said second mentioned compartment and for discharging it to a point remote from the space to be served by said apparatus with cool air.

1,985,617. DISTRIBUTOR HEAD. Harry E. Morton, Boston, Mass., assignor to B. F. Sturtevant Co., Inc., Boston, Mass. Application July 5, 1934. Serial No. 733,844. 12 Claims. (Cl. 62—127.)

1. An expansion mechanism for refrigeration evaporators, comprising an expansion valve, a distributor head, a plurality



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of outlets in said head leading to a plurality of evaporators, a plurality of orifices connecting with said outlets and with the output side of said valve, and means for preventing the segregation of unevaporated liquid from the evaporated liquid in its travel between said valve and said orifices.

1,985,619. REFRIGERATION. Nils Persson and Sigurd Mattias Backstrom, Stockholm, Sweden, assignors, by mesne assignments, to Electrolux Servel Corp., New York, N. Y., a corporation of Delaware. Application Oct. 30, 1930. Serial No. 492,189. In Germany Jan. 7, 1930. 3 Claims. (Cl. 62—119.5.)

3. In an absorption refrigerating system, a boiler, an absorber, vertically spaced conduits connecting the boiler with the absorber at high and low levels respectively, and horizontally separated heat conducting members secured to and between said conduits for transmitting different temperatures between the tubes for progressive heating of one conduit and progressive cooling of the other, without substantial horizontal equalization of temperature.

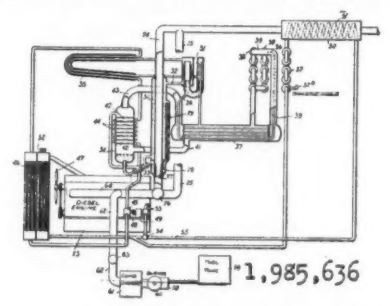
1,985,632. BRINE SOLUTION. Joseph Fleischer, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. No Drawing. Application Nov. 27, 1931. Serial No. 577,712. 6 Claims. (Cl. 252—5.)

1. A composition of matter comprising an aqueous solution of potassium and barium chlorides in substantially their cryohydrate composition having added thereto a small amount of another salt to permit freezing of most of the solution within a small range of temperatures close to the eutectic temperature while preventing complete solidification until a low temperature has been reached

4. A composition of matter substantially of the following composition: 15% KCl, 5% $BaCl_2$, 5% NaCl, 75% H_2O when the percentages are given by weight.

1,985,636. REFRIGERATION SYSTEM FOR VEHICLES. Benjamin S. Foss, Brookline, Mass., assignor to B. F. Sturtevant Co., Boston, Mass. Application Dec. 19, 1933. Serial No. 703,052. 4 Claims. (Cl. 257—7.)

4. Refrigeration apparatus comprising, in combination, an internal combustion engine, a combustion chamber, means for



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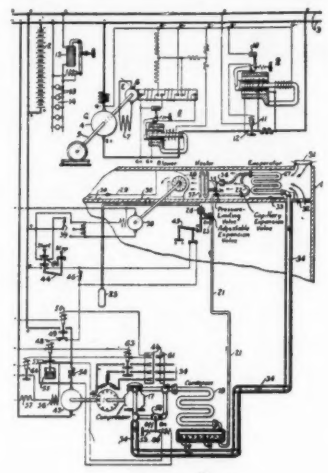
burning a fuel in said chamber to produce flue gases, means for producing a refrigerating effect, a heat collecting surface forming a part of said last mentioned means, and means for simultaneously passing the exhaust gases from said engine and flue gases from said chamber in contact with said surface to energize said last mentioned means.

1,985,639. ELECTRIC MOTOR CONTROL FOR REFRIGERATED CARS. Charles F. King, Jr., Pittsburgh, Pa., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application June 22, 1932. Serial No. 618,638. 13 Claims. (Cl. 172—239.)

1. An electric system for a vehicle, comprising a vehicle-driven direct-current generator and a detachable plug connection for alternating-current energy on the vehicle, an automatic switch means for changing an electrical connection when a predetermined extreme condition is reached and for changing another electrical connection when a second predetermined extreme condition is reached, self-starting dynamo-electric machine means having direct-current terminals and alternating-current terminals, a direct-current electromagnetic contactor for connecting said direct-current terminals to said direct-current generator, said direct-current contactor having a direct-current energizing coil, an alternating-current electromagnetic contactor for connecting said alternating-current terminals to said alternating-current plug connection, said alternating-current contactor having an alternating-current energizing-coil, a direct-current control-circuit including means for affording an indication whether said direct-current generator is up to a predetermined voltage, an alternating-current control-circuit including means for affording an indication whether said alternating-current detachable plug connection is completed, means jointly responsive to said means in the direct-current control-circuit and to the first-mentioned extreme-condition switch-change of said automatic switch means for energizing said direct-current enerzing coils and holding them energized, means jointly responsive to said means in the alternating-current control-circuit and to said first-mentioned extreme-condition switch-change for energizing said alternating-current energizing coils and holding them energized, and means responsive to the second extreme-condition switch-change of said automatic means for effecting the deenergization of both energizing coils.

1,985,641. ALTERNATING-CURRENT DIRECT-CURRENT SUPPLY SYSTEM FOR AIR-CONDITIONED CARS. Herman C. Krapf, Wilkinsburg, Charles Kerr, Jr., Edgewood, and Stanley G. Nottage, Murrysville, Pa., assignors to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application July 7, 1932. Serial No. 621,134. 8 Claims. (Cl. 171—313.)

3. An electrical system for a vehicle comprising a vehicle-driven direct-current generator, a direct-current bus for dis-



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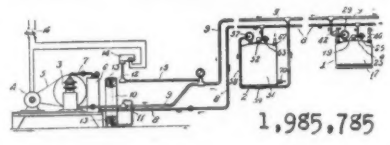
tributing electric current to a plurality of outlets for general lighting and other utility purposes on said vehicle, a storage battery connected across the direct-current bus, an electro-responsive reverse-current switching device serving to connect the generator to the direct-current bus when the generator has a voltage sufficient to supply current to the bus and serving to disconnect the generator in time to prevent a material reverse-current flow to the generator, a detachable plug connection for supplying externally generated alternating-current energy for the vehicle, a major-load device, and dynamo-electric converter-means connectable simultaneously to the direct-current bus and the alternating-current detachable plug connection for driving said major-load device and operable, when the vehicle is standing still and said detachable plug connection is plugged in to an external alternating-current source, to supply direct-current power to said direct-current bus.

1,985,689. HUMIDIFIER. Lawrence M. Persons, Clayton, Mo., assignor to The Emerson Electric Mfg. Co., St. Louis, Mo., a corporation of Missouri. Application March 6, 1931. Serial No. 520,521. 13 Claims. (Cl. 261—30.)

1. A humidifier comprising a cabinet having an air inlet passage through the top near one end and an air outlet passage through the top near the opposite end, a vertical series of vertically spaced water trays in said cabinet, means for limiting the depth of water in said trays, a wall below said inlet opening having an opening opposite the adjacent ends of said water trays, and a blower mounted below said inlet opening adjacent said opening through said wall for drawing air through said inlet opening and driving said air between said trays and from said cabinet through said outlet opening.

1,985,785. REFRIGERATING APPARATUS. Herbert C. Kellogg, Detroit, Mich., assignor to Temprite Products Corp., a corporation of Michigan. Application June 10, 1929. Serial No. 369,669. Renewed Jan. 4, 1934. In Germany May 19, 1930. 14 Claims. (Cl. 62—4.)

1. In refrigerating apparatus, the combination of means for liquefying gaseous refrigerant comprising a compressor and



1,985,785

a condenser; an evaporator having an inlet for liquid refrigerant and an outlet for gaseous refrigerant; a conduit connecting the said inlet to the discharge of the condenser; a second conduit connecting the said outlet of the evaporator to the inlet of the compressor; a valve for controlling the flow of gaseous refrigerant through the second conduit and adapted automatically to cut off said flow when the temperature in the evaporator falls below a predetermined point and to re-establish the flow when the temperature again rises above said point; a chamber for gaseous refrigerant communicating with the second conduit between the said valve and the compressor and having a capacity that is large in comparison with the capacity of the remainder of that part of the low pressure side of the system on the outlet side of the said valve; and automatic means adapted to start the compressor when the pressure in the second conduit rises above a predetermined value below the vapor pressure corresponding to the predetermined maximum temperature of the evaporator and to stop the compressor when the refrigerant pressure in the said second conduit between the said valve and the compressor falls below a predetermined value below the pressure at which said valve operates and substantially lower than the pressure at which the compressor starts.

1,985,816. COOLING UNIT FOR REFRIGERATING MACHINES. Lee S. Chadwick, Shaker Heights Village, and Marc Resek and Theodore B. Focke, Cleveland Heights, Ohio, assignors to Perfection Stove Co., Cleveland, Ohio, a corporation of Ohio. Application April 20, 1933. Serial No. 667,014. 15 Claims. (Cl. 62—95.)

1. An evaporator for refrigeration apparatus comprising a distributing head, tubing in looped form communicating therewith and extending therefrom in a substantially horizontal plane, said tubing being solely supported by said head, and a rigid body of metal encasing the tubing and the portion of the head wherewith it communicates, the same serving as a shelf for the support of an object to be chilled.

BUYER'S GUIDE

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TO THE REFRIGERATION INDUSTRY

SPECIAL ADVERTISING RATE (this column only)—$12.00 per space.
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A NEW COIL—A NEW PRINCIPLE—Incorporating the NEW RIFLED Tubing and
Like ALL PEERLESS COILS—NO SOLDERED RETURN BENDS
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Send for *your* bulletin

PEERLESS ICE MACHINE COMPANY
CHICAGO — TWO FACTORIES — NEW YORK
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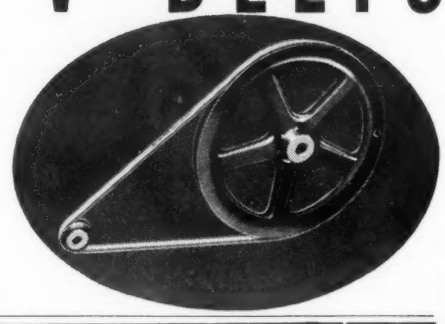
DAYTON V-BELTS

There is a Dayton V-Belt made especially for all makes and types of refrigerators, washing machines and other appliances. A stock is available near you. Send for price list and name of your nearest distributor.



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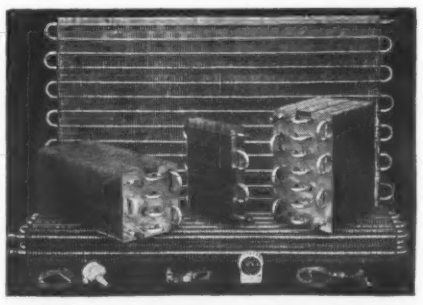

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	Electric Refrigeration News (weekly)	1935 Refrigeration Directory and Market Data Book (2 volumes)	Both Electric Refrigeration News and Refrigeration Directory
1 subscription	$3.00	$5.00	$6.50
5 or more each	2.75	4.50	6.50
10 or more each	2.50	4.00	6.50
20 or more each	2.25	3.50	5.75
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75 or more each	1.75	2.50	4.25
100 or more each	1.50	2.00	3.50

Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

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Name .....

Attention of In Care of .....

Street Address ..... **City and State**.....

We sell the .....**refrigerator and** .....
(Please indicate other products or principal line of business.)
1-9-35

QUESTIONS

Makers of Parts

No. 2013 (Manufacturer, California)—"We are planning manufacture of a small competitive refrigerator. Would like all available information on sources of supply of all required units. Please air mail your latest DIRECTORY. Please wire at our expense the names of the outstanding suppliers of compressors and evaporators."

Answer: Manufacturers of compressors, as advertised in ELECTRIC REFRIGERATION NEWS, are Copeland Refrigeration Corp., Lincoln and Holden Aves., Detroit, Mich.; Curtis Refrigerating Machine Co., 1912 Kienlen Ave., St. Louis, Mo.; Starr Co., Richmond, Ind.; Merchant & Evans Co., 21st & Washington Ave., Philadelphia, Pa.; Universal Cooler Corp., 7424 Melville Ave., Detroit, Mich.

Manufacturers of evaporators are Fedders Manufacturing Co., Buffalo, N. Y.; Peerless Ice Machine Co., 515 W. 35th St., Chicago, Ill.; McCord Radiator Co., Detroit; Trenton Auto Radiator Co., Trenton, N. J.

Service Manuals

No. 2014 (Service man, Michigan)—"Would you be able to furnish me an up-to-date service manual for refrigeration?"

Answer: We are actively working on plans for a *Master Service Manual,* but at the present time we cannot make a definite announcement regarding it.

We are working now on the 1935 edition of the REFRIGERATION DIRECTORY AND MARKET DATA BOOK, which we expect to issue on or about Feb. 20, 1935. We hope to bring out the proposed manual soon after the DIRECTORY is completed.

In the meantime we refer you to the series of articles on "orphan" makes of electric refrigerators which have been published this year (a list of the issues in which the articles appear can be found on page 12 of the Dec. 26 issue). The principles of operation covered in these articles are characteristic of most of the refrigeration systems in operation today.

We also refer you to the various lessons in the home study course offered by the Refrigeration and Air Conditioning Institute of Chicago which we are now publishing. (See the Nov. 14, Dec. 19, and Jan. 2 issues.)

List of Distributors

No. 2015 (Advertising agency, Iowa)—"Do you have available a list of electric refrigerator distributors?

"I am principally interested in the following cities right at this time:

"Chicago, St. Paul, Minneapolis, Philadelphia, New York City, Boston, Cleveland, and Detroit.

"If you have such a list, please let me have the names for these cities."

Answer: We cannot furnish you with a list of distributors. It is true that we have the names on file but we have obtained these lists from manufacturers with the distinct understanding that they would be used for subscription promotion purposes only.

World & Kentucky Sales

No. 2016 (Distributor, Kentucky)—"Will you kindly telegraph us collect following information: total refrigerator sales, also State of Kentucky sales for 1933 and 1934. If complete 1934 information is not yet compiled please give the latest figures available."

Answer: Estimated world sales of household electric refrigerators in 1933 were 1,080,000 units. Manufacturers who are members of the Refrigeration Division of National Electrical Manufacturers Association (Nema) sold 11,740 units in Kentucky during 1933.

Estimated world sales of household electric refrigerators in 1934 were 1,400,000 units (see analysis in Jan. 2 issue of the NEWS). Kentucky sales reported by Nema members for 11 months total 16,110 units. December figures have not yet been released.

$40 Refrigerator

No. 2017 (Foreign sales agent, New York City)—"I have a foreign client interested in purchasing a 4-cu. ft. refrigerator somewhere around $40 f.o.b. New York.

"Do you know of any manufacturer making an electric refrigerator near that price. If not, can you tell me what is the lowest priced refrigerator on the market?"

Sales by Cities & Counties

No. 2018 (Executive, NRA, Washington, D. C.)—"In connection with my work on the economics of the ice industry I desire to get the best possible figure on sales of electric and gas refrigerators both for household and commercial use. I am writing to you in this connection at the suggestion of Mr. Henderson of the Refrigerated Machinery Code Authority.

"At this time I am particularly anxious to secure figures showing the number of such units sold each year for the past five years in Ft. Worth and Tarrant County, Texas; Dallas City and Dallas County; Corsicana and Navarro County; Temple and Bell County; Cameron and Milam County, all of the above being in Texas.

"In addition, I should like to have similar information for Knoxville, Tenn.; and for Horatio and Sevier County, Ark.; Benton and Saline County, Ark.; Durant and Bryan County, Okla.; and Stillwater and Payne County, Okla.

"If you do not have such information already compiled, will you let me know what it would cost to have this done for official government business."

Answer: We do not have sales by years for individual cities and counties of the various states.

Beginning with January, 1932, the Refrigeration Division of Nema issued monthly bulletins of member company sales in the various states, and we therefore have this record of sales by states for each month through 1932, 1933, and 1934, exclusive of the December, 1934, report, which should be available within a few weeks. During 1932, manufacturers who are members of Nema sold about 80 per cent of the industry's total, about 84 per cent during 1933, and approximately 88.6 per cent during 1934.

The Nema tabulation of sales by states refer to household units only, and no such breakdown is available for commercial sales.

With regards to refrigeration statistics for divisions such as counties and towns, in 1931 the National Electric Light Association compiled a record of the number of wired homes in all communities of more than 2,500 population in the United States.

As of the end of 1931, ELECTRIC REFRIGERATION NEWS estimated the national average wired home saturation to be 17 per cent. The difference between this percentage and 100 per cent was considered to be the potential market for household electric refrigerators, and in this connection, the market percentage of 83 per cent was applied to the number of wired homes in each community given on the Nela list to determine a potential market.

This information was published in its entirety in the 1932 REFRIGERATION DIRECTORY AND MARKET DATA BOOK.

In 1934, a survey was made among public utilities in the United States asking for revised figures on wired homes and potential markets in the communities which they served. Approximately 100 utility companies sent in revised information which was published in the 1934 REFRIGERATION DIRECTORY AND MARKET DATA BOOK. Where no revised information could be given for potential markets by utilities, the national average saturation of 23.5 per cent, as of Jan. 1, 1934, was subtracted from 100 per cent, and this percentage was applied to the number of wired homes in such communities to obtain a potential market figure.

A further survey was made among public utilities during the year 1934, and the results will be published in the 1935 REFRIGERATION DIRECTORY AND MARKET DATA BOOK, to appear in Volume II, the Market Data Section.

Merchandising Clocks

No. 2019 (Manufacturer, Canada)—"We would appreciate your advising us, the names and addresses of any firms which you have listed in your organization who manufacture coin-controlled merchandising clocks."

General Electric Co., Schenectady, N. Y.
Coin-A-Day
Eltime Clock Co. Div.
Electric Auto-Lite Co., Toledo, Ohio.
Bugetklok Co.
915 Washington Ave., Minneapolis, Minn.
International Register Co.
15 S. Throop St., Chicago, Ill.
Landis & Gyr, Inc.
104 Fifth Ave., New York, N. Y.
Mills Novelty Co.
4100 Fullerton Ave., Chicago, Ill.
Frank Pierman, Ottawa, Ohio.
Seeburg Corp.
1510 Dayton St., Chicago, Ill.
Zell Products Corp.
536 Broadway, New York, N. Y.

Controls for Cold Rooms

No. 2023 (Manufacturer, France)—"We are actually looking for a firm specialized in thermostats, aquastats, automatic valves, and all other apparatus necessary in building up cold rooms which is our principal business here.

"As we are well introduced here, our desire is to obtain by contract the exclusive representation and so become sole agent for the whole of France. After consulting your paper, the ELECTRIC REFRIGERATION NEWS, we thought that possibly you might know a firm advertising in your review that would be pleased to engage an agent for this country and so we take the liberty in asking you to kindly give us the passes of such firm that you think susceptible of furnishing us with the articles stated ahead and the sometime filling out a contract with us."

Answer: Clipped pages No. 190 to 195 from the 1934 REFRIGERATION DIRECTORY in which all manufacturers of controls are listed have been mailed to you.

Note that the following concerns advertise control equipment: Cutler Hammer, Inc., 1252 W. St. Paul Ave., Milwaukee, Wis.; Penn Electric Switch Co., 200 Walnut St., Des Moines, Iowa; Detroit Lubricator Co., 5842 Trumbull Ave., Detroit, Mich.; The Automatic Reclosing Circuit Breaker Co., 1300-10 Indianola Ave., Columbus, Ohio; Minneapolis-Honeywell Regulator Co., 2816 Fourth Ave., South, Minneapolis, Minn.

Long Island Service Firm

"I noticed on page 15 of the Dec. 12 issue inquiry number 1984 for the name of a service company to render service in Long Island City, Astoria, Woodside, Jackson Heights, Elmhurst, Corona, Forest Hills, or Flushing.

"Our organization has had experience with a Frank Kramer located at 115-20 124th St., Ozone Park, Long Island, New York, who is well equipped to render service on refrigerators not only in the localities which have been enumerated but for Long Island in its entirety.

"We pass this information on to you so that you may make due record of it and also be in a position to notify the party who is making the inquiry."—Baitinger Electric Co., Inc., 95 Chambers St., New York City.

CLASSIFIED

RATES: Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS WANTED

ENGINEER seeks contact with manufacturer interested in original line of refrigeration accessories for all sizes up to 15 ton for air conditioning and multiple installations. Working models available of automatic and thermostatic water and expansion valves, motor load control, high side float, and other devices. Long experience. Box 662, Electric Refrigeration News.

HAVE just disposed of own refrigeration business and now desire position with factory, distributor or dealer, anywhere, as service, installation, shop-man or supervisor. Have 7 years experience with methyl and sulphur household and commercial systems. Commercial field work preferred but not essential. Good references. Starting salary optional with proper organization. Box 665, Electric Refrigeration News.

FRANCHISE OPEN

STATE DISTRIBUTORS wanted for new revolutionary commercial refrigeration accessory developed after three years intensive research by group of the foremost engineers in the U.S. Write for particulars, stating qualifications. Ray Corporation, Hammond, Ind.

FRANCHISE WANTED

MANUFACTURERS REPRESENTATIVE contacting Michigan concerns is interested in new lines to sell especially to mechanical refrigerator makers. If you have something new to offer, let us help. We know the men to see and can get to them. In business over fifteen years. Commission basis only. Exclusive representation only. Box 654, Electric Refrigeration News.

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ISOBUTANE: We ship Isobutane in your cylinders at: 5 lbs.—$1.50 per lb., 10 lbs.—$1.35, 25 lbs.—$1.10, 50 lbs.—$1.00. In our cylinders of 115 lbs. at $80. Shipments made the same day we receive orders. The Standard Refrigeration Co. of Pgh., 1148 Dohrman St., McKees Rocks, Pa.

PATENT SERVICE

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. Van Deventer (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

SCHOOLS

MEN: Train for Refrigeration and Air Conditioning, at home, using same text material you would use in best resident school. Supervised individual instruction under licensed teacher with Doctor's degree. Shoeck School, Alton, Ill.

PARTS & SUPPLIES

WHOLESALE Refrigeration Supply Parts—Indiana's most complete stock. Representing Kerotest valves and fittings, Brunner and Lipman compressors, Peerless fin coils, Penn and Detroit controls, Virginia Smelting SO_2 and methyl chloride gas, Gilmer belts, Dehydrated tubing, Marsh gauges, Chase sweat fittings, Oil, draft beer supplies, etc. F. H. Langsenkamp Co., 231 E. South St., Indianapolis, Ind.

REFRIGERATION SERVICE

HALECTRIC thermostat repair service. B & B, G.E., Cutler-Hammer, Penn, Ranco, Tag., etc. Float valve needles reground and polished. Expansion valves repaired. Gas service, Ethyl, Methyl, Iso-Butane, Sulphur. Your cylinder or ours. Competitive prices. Distributors of "Flawless Brand" tubing. Halectric Laboratory, 1793 Lakeview Road, Cleveland, Ohio.